

UNIVERSITY OF CALCUTTA

UNIVERSITY QUESTION PAPERS

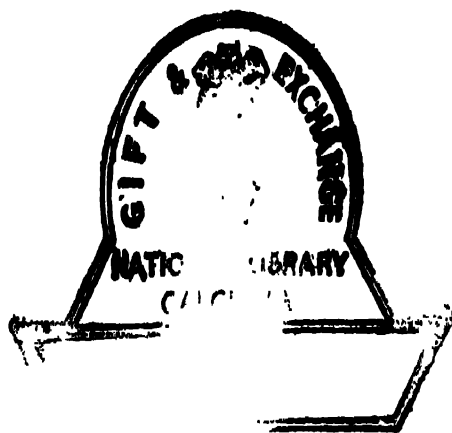
FOR THE YEAR

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UNIVERSITY QUESTION PAPERS

Matriculation Examination 1934

ENGLISH

FIRST PAPER

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PART A

TRANSLATION FROM BENGALI INTO ENGLISH

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Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Translate into English any two of the following passages :

(a) রঘুপতি সন্ধ্যার পর গৃহের নিকটে উপস্থিত হইয়া দেখিলেন, গৃহের অদূরে এক শশস্র প্রহরী দাঁড়াইয়া রহিয়াছে। প্রহরী তাঁহাকে জিজ্ঞাসা করিল, “তুমি কে?” রঘুপতি নির্ভয়ে আপনার পরিচয় দিলেন। পরিচয় পাইবামাত্র প্রহরী তাঁহাকে বন্দী করিল। তখন রঘুপতি প্রহরীকে বলিলেন, “গৃহে আমার পুত্র ভয়ানকরূপে পীড়িত। আমি পুত্রকে একটিবারমাত্র দেখিয়া পুনরায় তোমার নিকট আসিব, তখন তুমি আমাকে বন্দী করিও।” প্রহরী প্রথমে তাঁহার কথায় বিশ্বাস করিতে পারিল না। কিন্তু সে নিজে পুত্রের পীড়ার সংবাদে উদ্ভিগ্ন ছিল। সেইজন্য তাহার মনে দয়ার সঞ্চার হইল। সে রঘুপতিকে গৃহে যাইবার জন্ত অল্পমতি দিল। রঘুপতিও পুত্রকে দেখিয়া যথাসময়ে প্রহরীর নিকট আসিয়া আত্মসমর্পণ করিলেন এবং বলিলেন, “এখন তুমি আমাকে বন্দী করিতে পার।” 20

(b) বনবীর আসিয়াই পান্নাকে জিজ্ঞাসা করিলেন—“উদয় কই?” পান্না নিজের ছেলের প্রাণ দিয়াও রাজপুত্রের প্রাণ বাঁচাইবার জন্ত ব্যস্ত,—সে

চূপ কৰিয়া দাঁড়াইয়া থাকিয়া আকুল দিয়া নিজের ছেলেকেই দেখাইয়া দিল। বনবীৰ পান্নাৰ ছেলেকে উদয়সিংহ ভাবিয়া এক-কোপে তাহাৰ গলা কাটিয়া ফেলিলেন। বিছানার উপর নিজের ছেলের কাটা-মুণ্ড দেখিয়াও পান্নাৰ তখন কাঁদিবার সময় নাই। যে-ৰাজপুত্ৰকে বাঁচাইবার জন্ত সে নিজের ছেলেকে ইচ্ছা কৰিয়াই বলি দিল, তাঁহাকে বনবীৰের চোখের আড়ালে লইয়া গিয়া লুকাইয়া রাখাৰ দরকার। পান্না ৰাজপুত্ৰীৰ কাঁদাকাটিৰ মধ্যে ৰাজপুত্ৰী হইতে বাহিৰ হইয়া গেল। নাপিত ফলের চুবড়িৰ ভিতৰ উদয়সিংহকে লইয়া পথে দাঁড়াইয়াছিল। পান্না ছুটিয়া গিয়া সেখানে উপস্থিত হইল। তাৰপৰ পান্না ৰাজপুত্ৰকে কোলে লইয়া তাঁহাৰ জন্ত ৰাজ্যে ৰাজ্যে আশ্ৰয় ভিক্ষা কৰিতে লাগিল। 20

(c) আগে যখন একা মাঠে কিংবা পাহাড়ে বেড়াইতে যাইতাম, তখন সব খালি খালি লাগিত। তাৰপৰ গাছ, পাখী, কীট-পতঙ্গদিগকে ভালবাসিতে শিখিয়াছি। সে অবধি তাদেৰ অনেক কথা বৃত্তিতে পাৰি, আগে যাহা পাৰিতাম না। এই যে গাছগুলি কোন কথা বলে না, ইহাদেৰ যে আবার একটা জীবন আছে, আমাদেৰ মত আহাৰ কৰে, দিন দিন বাড়ে, আগে এ সব কিছুই জানিতাম না; এখন বৃত্তিতে পাৰিতেছি। এখন ইহাদেৰ মধ্যেও আমাদেৰ মত অভাব, দুঃখ-কষ্ট দেখিতে পাই। জীবনধারণ কৰিবার জন্ত ইহাদিগকেও সৰ্বদা ব্যস্ত থাকিতে হয়। কষ্টে পড়িয়া ইহাদেৰ মধ্যেও কেহ কেহ চুৰি ডাকাতি কৰে। মাহুষেৰ মধ্যে যেকুপ সদৃশ আছে, ইহাদেৰ মধ্যেও তাহাৰ কিছু কিছু দেখা যায়। 20

TRANSLATION FROM ASSAMESE INTO ENGLISH

Paper-setter—MR. SURYYAKUMAR BHUIYAN, M.A. B.L.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Translate two of the following passages into English :—

20 × 2 = 40

(a) ইংলণ্ড দেশৰ আটায়ে লিখা-পঢ়া জানে। গাৰে-ভূঁয়ে গোটেই দেশখনতে মুনিহ ভিকতা সকলোৰে লিখিব-পঢ়িব পাৰে। তাত ধনীৰ

পৰা দুখীয়ালৈকে সকলোৱে চৈধ্য বছৰ নহয় মানলৈকে লৰা-ছোৱালীক স্কুলত পঢ়ুৱাব লাগে। তাকে নকৰিলে চৰকাৰৰ পৰা কাচাৰীলৈ ধৰি নি জৰিয়না কৰেগৈ। পঢ়াৰ বাবে স্কুলত একো মাছুল দিব নালাগে। এইবিলাক স্কুলক তাত গাঁৱলীয়া স্কুল বোলে। এই গাঁৱলীয়া স্কুলৰ গুণতে ইংলণ্ডত মেটোৰ মূটীয়েও লিখা-পঢ়া জানে। সেই গাঁৱলীয়া স্কুলত লৰা-ছোৱালীয়ে চৈধ্য বছৰ বয়সলৈ পঢ়িলেও সিহঁতে বহুত কথা শিকিব পাৰে। আমাৰ প্ৰাইমেৰি পাচ কৰা লৰাক ইমান কথা শিকোৱা নহয়। ইংলণ্ডৰ গাঁৱলীয়া স্কুলবোৰত বাঢ়ৈ আৰু দৰ্জীৰ কামো অল্ল-অচৰপ শিকোৱা হয়। বহুতে সিমানে লিখা-পঢ়া এৰি কামে-কাজে সোমায়। কোনোৱে হোটেল বা দোকানত সোমায়, খোনোৱে লগুৱা সোমায়।

(b) অসম দেশৰ চাহ পৃথিৱীৰ বহুত ঠাইলৈকে যায়। অসমৰ মাটি চাহ-খেতিৰ কাৰণে যেনে উপযোগী অনেক দেশৰ মাটি তেনে নহয়, সেই কাৰণে বহুদেশে অসমক চাহৰ দেশ বুলিহে জানে। ইয়াত যে বহুত ডান্দৰ ডান্দৰ গৌৰৱৰ কথা আছে সেইবোৰৰ বিষয়ে হলে আন দেশৰ মানুহে নাজানে। অসমত গিৰি ভৈয়াম দুয়ো আছে। ইয়াৰ মাটি সাকৰা। নাৱেৰে সৈতে ইয়াৰ সকলো ঠাইলৈকে অহাযোৱা কৰিব পাৰি। ইয়াত বহুত বীৰপুৰুষে জন্ম গ্ৰহণ কৰিছিল। ইয়াত বহুত সূচতুৰ বুদ্ধিমান ৰাজনীতিজ্ঞ পুৰুষ ওলাইছিল। ইয়াৰ পণ্ডিতৰ আগত আন দেশৰ পণ্ডিত পৰাজিত হৈছিল। ইয়াৰ তিকতাই স্বামীৰ কাৰণে হওক বা দেশৰ কাৰণে হওক, ইহি ইহি প্ৰাণ বিসৰ্জন দিছিল। ইহাৰ তিকতাসকল কামে-কাজে বৰ কাজী। এই দেশৰ মানুহ কথকী নহয়, তেওঁলোকে কথাতকৈ কাম ভাল পায়। এই দেশৰ ধৰ্ম উদাৰ। ইজাতে সিজাতক, ই জাতিয়ে সি জাতিক ঘিণোৱা অজাস ইয়াত ইমান দৰে নাই। এই দেশৰ অনেক ঠাইত বিধবা-বিবাহ চলে। অসমীয়াই ভাল ভাল গুণবোৰ জীয়াই ৰাখিব লাগিব, তাকে কৰিলে তেওঁলোক এসময়ত জগতৰ এটি অতি উন্নতিশীল জাতি হৈ পৰিব।

(c) ছাত্ৰজীৱন বৰ স্বৰ্ণৰ কাল। এই কালৰ শিক্ষাৰ ওপৰত আমাৰ ভৱিষ্যতৰ ভাল-বেয়া নিৰ্ভৰ কৰে। ছাত্ৰজীৱনত আমাৰ চাৰিটা গুণ থাকিব লাগে,—নম্ৰতা, সন্তোষ, ভক্তি আৰু পৰিশ্ৰম। অহঙ্কাৰী হলে, মন সদাই নিৰানন্দ হৈ থাকিলে, গুৰুৰ বাক্যলৈ আওকাণ কৰিলে, আৰু নিজে যত্ন

নকৰিলে কেতিয়াও বিজ্ঞা-শিক্ষা নহয়। অহঙ্কাৰী মানুহে আপোনাকে বহুত জ্ঞান-ভূনা ডাঙৰ মানুহ হেন জ্ঞান কৰে; এতেকে সি চিৰকাল মূৰ্খ আৰু সকলোৰে ঘৃণনীয় হৈ থাকে। যাৰ মন সদাই চঞ্চল তাৰ কোনো কথাই ভাল নালাগে দেখি তেওঁ থিৰ হৈ বিজ্ঞা শিক্ষা কৰিব নোৱাৰে। ছাত্ৰজীৱনত যিবোৰ ভাল ভাল কথা শিক্ষা কৰা হয় সেই মতে কাম কৰিবলৈ চেষ্টা কৰিব লাগে। বি-এ, এম-এ পাচ কৰে বহুতে, কিন্তু প্ৰকৃত শিক্ষিত মানুহ অতি কম। সকলোৰে পৰা ভাল কথা শিকি আৰু সেইমতে আচৰণ কৰিলেহে চৰিত্ৰ-গঠন হয়। কিতাপত পোৱা ভাল কথা কিতাপতে থলে লিখা-পঢ়া নিশিকাঠি ভাল।

— — —

TRANSLATION FROM MANIPURI INTO ENGLISH

Paper-setter— MR. SANJIBAN NADIA SINGH

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Translate any two of the following paragraphs into English :—

(a) নেলসন হাঙ্গৰা অসি বিলাতকী অচোবা শাগৈ অমদা পোকপনি ; বিলাতকী মমিং চংলবা অচোবা লৰ্ডগী শাগৈ অমগস্ত মবী থোকলম্মী। নপাস্ত পাভ্ৰীগী থবক তৌৱম্মী। মরম অহুনা নেলসননা অচোবা শাগৈগী নতিক চাবা গুণ পূমনমক ফংলম্মী। মাহাককী মৰাঙ্গবক ধীবদি চহি নহা ঙইনা মমা থাইনবা তাখী। মমানা শিবদগী মথল মথা অমাস্থা থুদোং চাদবা থোকথিবনা নৱউইচ হাইস্কুলগী তহা লোইদানা ময়ুমদা হল্পকলে। 20

(b) শিলংদা লৈৱিৰৈঙদা নোংমদি বীৱেন্না মথল্লতা কোঈ থোৱকই। ঙ্ৰাং জুংদাং অমদা উৱীৱৈবু উৱম্মী ; উৱীৱৈ অহু শেগাঙ্গিববা ফি অমতং ইন্দুনা চীংয়া অমদা মথল্লতা কপ্তুনা লৈৱি ; থংহৌদনা ভুবম্মা লাক্তুনা উৱীৱৈবু ফুহুনা ফুহুনা চিংবা লাকনৱি ; উৱীৱৈনা বীৱেনবু কোহুনা কোহুনা কপলি অমস্তং চংলোইদবগী থাংবা লাকনৱি। বীৱেন্নস্ত মপাঙ্গল থেকনা চেন্দুনা তানবা লাকনৱি তোইগুস্তং মপাঙ্গল ইথোক থোক্তে। অমরোমদা ভুবম্মা উৱীৱৈবু ইলাই লাইনা অৱাংবা চীংদোল অমদা পুথংথে। 20

(c) हाँ असिबू कनानो ? माहाकना एहाकपू अखूक लूना तोरिवा असिना करिगीनो ? माहाक मशानखू मैतैनि हाँरि, ऐनखू मतम अमदा, मफम अमदा माहाकपू उथिबकुम तोरे । माहाककी भूँशिवा कोलोई असिखू मतम अमदा ताथे हाँरिना निंशिंङि । माहाकना हाँरिखी मै तैबू डक्खिंलबदि नोचूपकी लखी असि ताकड । करे, लखी थंलबदि मैतैगी ईपा ईपूशिं असिखू असिदा शोङ्गिदना लाकनि । मै तैना डमलबखू एना मैतै निंथोगी खुदा तूहना माहाककी मथराइदि निगे ।

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TRANSLATION FROM MAITHILI INTO ENGLISH

Paper-setter—MR. GANGAPATI SINGH, B.A.

Candidates are required to give their answers in their own words as far as practicable

The figures in the margin indicate full marks.

Translate any two of the following passages into English :—

(a) सारदा एकट पास भेला सौँ ज महान उपकार भेल अछि से कौनो पाठक सँ अज्ञात नहिं अछि । एहि एकट क प्रशंसा देगक महान बिद्वान नेता लोकनि तथा देशक समसिद्ध पत्र पत्रिका मुक्त कएल सौँ कैलन्हि अछि । कतिपय स्यादाँध और किछु सनातन धर्मी एहि एकट क विरोधी कैलन्हि अछि । तकरा उत्तरमें केवल एतव कहब जे जखन डाक्टर रोगीक निकट जाके ओकर अपरेशन करै लगै छथि ताहि काल रोगी आर्त्तनाद सौँ काने लगैछ ; किन्तु डाक्टर कानव और गारीक कोनो परबाहि नहिं के अपन कर्त्तव्य करै छथि और सडल मांसक रोगीक शरीर सौँ बाहर कय दै छथि ; कियेक तँ डाक्टर बुझै छथि जे सम्प्रति रोगीक दिमाग ठीक नहिं हैन्ह ; जखन रोग सँ मुक्त हैताह और दिमाग ठीक हैतन्ह, ओहि काल डाक्टरक अपरेशन-गुण बुझयिन्ह और अवश्य धन्यवाद देयिन्ह । कहबाक तात्पर्य जे सम्प्रति जे केथी कोलाहल मचा रहल छथि ओ लोकनि किछु दिनक बाद जखन एकर गुण बुझयिन्ह तखन अवश्य ओ सारदाजी के धन्यवाद क पाव मानयिन्ह ।

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(b) चारि मास बीति गेल । हमहुँ सरला काँ बिसरि जकाँ गेलियैक । एक दिन हम अपन आम क गाछी में टहलि रहल कलहुँ । अकस्मात् उत्तर दिशा में विवाह क गीत सुनि पड़ल । हमर हृदय सहसा खल्ल भै उठल । उद्विग्न भय कय ओहि गाछी क रखवार पुछलियैक :—“री, रघुनाथ ! ई विवाह क गीत ककरा आँगन में छीइत छैक ?”

हमरा प्रश्न क उत्तर में रघुनाथ उदास भय कय बाजल :—“ओ बाबू ! से की पूछैत की ? दुखरनभा एकटा बुढ़वा क छार्थें अपन बेटी केँ खातसै में बेचलक अछि । ओ बुढ़वा त, सरलाक पितामहक बतारी हैतैक । ने ओकरा मुँह में एकोटा दाँत छैक और ने माथ में एकोटा केश काही । आवक बाभन तँ लोभ वश अनर्थ करैक । आव ओहि छौंड़ी क भाग में विधाता जे लिखने छीइथीन्ह, माए बाप तँ ओहि नेना क गरदन में कुरिये रैति देलकैक” ॥

(c) दरभङ्गा जिला में पचही नामक एक ग्राम अछि ; ओ ग्राम ऐतिहासिक दृष्टि सँ सर्वथा उल्लेखनीय अछि । एहि ग्राम में मिथिला क परम प्रसिद्ध दार्शनिक श्रीवर्द्धमानोपाध्याय जी भय गेलाह अछि । हुनका चामुण्डा, जयमङ्गला ओ दुर्गा नामक तीन कन्या छलथिन्ह । ई तीनू बहिन भानू साचात् देवकन्या छलीह । ओलोकनि प्रतिदिन प्रातःकाल अपन पिता केँ देवपूजार्थ फूल तोड़ि केँ भानि दैत छलथिन्ह । एक दिन ओलोकनि एक निकटस्थ उपवन में फूल तोड़ि रहल छलीह । देववशात् ओही समय एक मोगल सेना पथक्रमें जाय रहल छल. तथा हुनका लोकनि क अनुपम रूप लावण्य पर मुग्ध भै बलात्कार तीनू बहिन केँ दिहल जे वापर उद्यत भै गेल । ओ तीनू कन्या बचवा क कीनीटा अन्य उपाय नहि देखि सहसा पृथ्वीमाता काँ अपना अङ्ग में स्थान देवाक हेतु प्रार्थना करय लगलीह । पृथ्वी भट्ट फाटि गेलथिन्ह और तीनू बहिन ओही में सदा क हेतु समाय गेलीह । उपाध्याय जी जखन अपन कन्या लोकनि काँ नापता देखि बहुत चिन्तित भेलाह, तखन राति में तीनू बहिन हुनका स्वप्न देलथिन्ह—“जे एहाँ हमरा लोकनि क हेतु कोनो चिन्ता नहिँ करू ; हम तीनू गोटे अमुक स्थान में पृथ्वी क गर्भ में स्थित छौ ; और हमरा लोकनि क ओही ठाम पूजाछी” । ई स्थान अद्य पर्यन्त समस्त मिथिला में श्रीचामुण्डादेवीस्थान क पवित्र नाम सँ प्रसिद्ध अछि ।

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TRANSLATION FROM HINDI INTO ENGLISH

Paper-setter—PROF. SUNITI KUMAR CHATTERJI, M.A., D.LIT.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Translate any two of the following extracts into English :—

(a) बहुत दिन हुए, सुदर्शन नाम एक राजा था । उसके कई बेटे थे, पर सब मूर्ख । वह न पढ़ सकते थे, न लिख सकते थे ।

राजा सब उपाय करके धक गया तो अपने मनमें कहने लगा—“हम इन मूर्ख लड़कों की व । कर । जो पढ़े लिखेंगे नहीं तो यह राज कैसे करेंगे । हम मर जाएंगे तो इनकी क्या गति होगी ?”

राजा को उदास देख एक पंडित, जिसका नाम विष्णुशर्मा था, बोला—“मैं राजकुमारों की सिखा पढ़ा दूंगा” ।

राजा ने पूछा—“कैसे ?”

विष्णुशर्मा बोला—“मैं इन्हें पीछी न पढ़ाऊंगा, मैं इनको कहानियाँ सुनाऊंगा । गीदड़ और सिंह, और वन के जानवरों की बातें बताऊंगा । कुछ जन्तु चतुर होते हैं, कुछ बोद्धे, कुछ विश्वास के योग्य हैं, कुछ धूर्त । लोग भी ऐसे होते हैं, कुछ भले, कुछ बुरे । मैं राजकुमारों को बुद्धिमान बना दूंगा” ।

राजा ने कहा—“बहुत अच्छा” ।

विष्णुशर्मा राजकुमारों की अपने घर लے गया । उसने उनको मारा पीटा नहीं, और न घडका । उनसे सौंठी सौंठी बातें कहीं, और उनको अपने पास बैठकर कहानियाँ कहने लगा ।

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(b) साइकिल द्वारा भारत-यात्रा करने के पूर्व मैंने अपने एक मित्र से अपने विचार प्रकट किये । वे सज्जन पढ़े-लिखे समझदार व्यक्ति हैं । मैंने सोचा कि वे अवश्य मुझे उत्साहित करेंगे । मैंने उनसे कहा—“मैं साइकिल से भारत की यात्रा करना चाहता हूँ । आप की क्या राय है ?”

मित्र—“अरे भाई, साइकिल से यात्रा, साइकिल से ! लंगड़ा हो जाओगे । फेफड़े और टांगें बिलकुल खराब हो जाएंगी” । आसपास बैठे हुए कई मित्र हँसने लगे । मैंने अपने की हास्यास्पद समझकर इस सम्बन्ध में अधिक बातें नहीं कहीं । चपचाप चल दिया ।

दूसरे मित्र से जब फिर मैंने यह विचार प्रकट किये, तो उन्होंने ने कहा—“गरमी का मौसम है, दस कदम चलने पर मर जाओगे” ।

तौसरे मित्र से पूछा, तो उन्होंने ने कहा—“बिहार प्रान्त में पक्षियों की तरह बड़े बड़े मच्छर होते हैं, इस लिये इस समय यात्रा करना अच्छा नहीं” ।

चौथे सज्जन ने कहा—“भ्रमण तो अच्छा है, पर अकेला अच्छा नहीं” ।

इसके बाद मैंने किसी से पूछना उचित नहीं समझा । यात्रा करना नियथ कर लिया । 20

(c) सड़क के किनारे बैठी हुई एक घामवाली बुढ़िया की अपनी घास लिये बड़ा झी चिन्ता थी । घास का लंनेवाला कोई न था । मैंने पूछा—“बुढ़िया, मच मच बताओ । यह घास कितनी की दीगी ?”

बुढ़िया ने कहा—“एक आना पैसा मिल जाता तो मेरा काम चल जाता” ।

मैंने पूछा—“आज क्या तुम्हें एक आने पैसे की बड़ी जरूरत है ?”

वह एक साँस खींचकर कहने लगी—“हाँ” । इस में से दी पैसे तो मैं बगिये की देती । एक महीना हुआ उसने नमक उधार ले गई थी । कई दिन से नमक चूका है । एक पैसे

का आज नमक ले जाती। मेरे एक नाती है। उसके लिये एक पैसे का गुड़ ले जातो। कई महीने से उसकी गुड़ देने का वादा कर रक्खा है। कल शाम से ही वह गुड़ गुड़ चिल्ला रहा है। आज मैं बड़े तड़के यह सोच कर उठी कि जल्दी चास बँचकर पैसे मिल जाएंगे तो नाती के लिये गुड़ भी लेती जाऊँगी। आते वक्त मैं उससे बचदा भी कर आई थी। वह मेरी गह देखता खड़ा होगा। देर ही जाएगी, तो वह सी जाएगा” । 20

TRANSLATION FROM MARATHI INTO ENGLISH

Paper-setter—PROF. D. R. BHANDARKAR, M.A., PH.D.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Translate into English any two of the following passages : -

(a) बायका न शिकल्या तर उत्तमच, शिकल्याच तर पोथ्यापुराण' बाचण्याइतकें त्यांनीं शिकविं, ज्यासी शिकून त्यांना नोकऱ्या करावयाच्या आहेत काय असे' त्या वेळच्या बायकांनाच काय पण पुरुषांनाहि वाटत होते. शिवाय आपल्या मुली मडमा होतील, स्वेच्छाचारी होतील ही भीति. रमाबाई भरसभेत, पुरुषांत, आपल्या नवऱ्याच्या देखत, न लाजतां, बोलल्या, या पेक्षां स्वेच्छाचाराचे' दुसरे उदाहरण कुठले' असे' रमाबाई'च्या ताईसासुबाई त्यायमूर्ति गणडे यांना समजावून देत होत्या. पण ही भीति ताईसासुबाईंच्या मनांतच तेवढी त्या कालीं वागत होती असें नाही. डॉ. आनंदीबाई जोशी यांना शिचणाचे कामीं रमाबाईंच्या पेक्षांही अधिक वास, तीहि पुरुषवर्गाकडून सोसावा लागला. 20

(b) माझा पूर्वजाविषयी मला जितकूल माहिती नाही. माझा पूर्वजांना आणि दुसऱ्या शिंदी लोकांना आफ्रिकेहून अमेरिकेला जहाजांतून आणतांना त्यांना वाटेत जे भयंकर हाल भोगावे लागले, त्या विषयी खोपऱ्यांत आणि नंतर इतर ठिकाणीं कांहीं लोक कुजबुजत असतांना मो एकिंल्ले' होते. आईहून अधिक अशी माझा कुलाविषयी माहिती मला मिळाली नाही. आईशिवाय मला एक सावव भाऊ आणि एक सावव बहीण होती. गुलामगिरीच्या दिवसांत गुलामांच्या कुटुंबांच्या माहितीकडे किंवा कागदपत्रांकडे कोणी विशेष लक्ष्य देत नसत. माझी आई गुलामांचा सौदा करणाऱ्या एका व्यापाऱ्याच्या मनांत भरली असावी, असें मला वाटतं. त्याने' तिला विकत घेतले', व तेंद्रापासून ती तिचा व माझा धनी झाला. नवीन गाय किंवा घोडा खरेदी करण्या सांग्वाच ऱ्हासोटा होता. 20

(c) माझ्या वयाच्या बाराव्या वर्षीं माझ्या मामांच्या दीन मुलांबरोबर माझी मुंज भाली. पण एक मोठ्या घाटाच्या गंमतेशिवाय अधिक काय झाले ते 'आम्हांस उमगले' नाही. एवढे बरीक पाठवते की त्या प्रसंगी ध्यानांत ठेवण्यासाठी कांही शब्द उपाध्येबुवांनीं माझ्या कानांत सांगितले, पण तो फक्त अमुकवेलीं कानांत जाणवे अडकविण्याविषयी उपदेश होता. नंतर आम्हांस संध्या शिकविण्यासाठी एका भटजीची योजना झाली. परंतु संध्या संस्कृत भवित असल्यामुळे व त्या भाषेचा आम्हांस त्यावेलीं गंधही नसल्यामुळे, ती आम्हांस अवजड व रुच्य वाटे. संधेच्या चारंभीच्या चौवीस नामांशिवाय शेषसंध्येचा अर्थ आमच्या शिक्षक भटजीसच कळत होता किंवा नाही कोण जाण ! मात्र त्याचे उच्चार, हातवारे व इतर प्रकार आरही जसेच्या तसे करीत असूं. अशी कसरत तीन महिनेपर्यंत चालली, व नंतर भटजीस नोटीस देण्यांत आली.

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TRANSLATION FROM URDU INTO ENGLISH

Paper-setter—MAULVI SHAH KALIMUR RAHMAN, M.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Translate into English any two of the following extracts :-

A

20

جب ہم ایون ایران سے، ہندوستان کو پہرا اور کابل آکر آرام سے بیٹھا - تو اکبر کی عمر پانچ برس سے کچھ زیادہ ہوئی - یہ بھی چچا کی قید سے چھٹا اور سیرو شکار جو شاہزادوں کے شغل ہیں ان میں دل خوش کرے لگا - ایک دن کتے لیکر شکار کو گیا - کوہستان کا ملک ہے - ایک پہاڑ میں ہرن خرگوش وغیرہ شکار کے جانور بہت تھے - چاروں طرف نوکروں کو جما دیا کہ راستہ روکے کھڑے رہیں - کوئی نکلنے نہ پائے - اُسے لڑکا سمجھ کر نوکروں نے بے پروائی کی - ایک طرف سے جانور نکل گئے - اکبر بہت خفا ہوا - اُلٹا پہرا - اور جن نوکروں نے غفلت کی تھی انہیں رسوائی کے ساتھ تمام اردو میں

تشریح کیا (پہرایا) - ہمایوں یہ سنکر خوش ہوا اور کہا شکر خدا کہ ابھی سے اس نونہال کی طبیعت میں سیاست شاہانہ اور ایجاد آئین کے اصول ہیں *

13

20)

نیوٹن کو تمام حکمائے انگریزی پر فوق ہے - بلکہ میری دانست میں یورپ کا کوئی حکیم ریاضی دان اس یگانہ روزگار کا ہمسر نہیں ہے - یہ شخص شرفائے انگلستان سے ہے - اور اپنی ذات سے بڑے خود شرافت مجسم تھا - چونکہ ایام خردسالی میں نیوٹن یتیم ہو گیا تھا اس لئے اس کی تعلیم و تربیت کی کفیل صرف اُسکی ماں تھی - نیوٹن گریڈنہم کے اسکول میں پہلے داخل ہوا تھا اور وہاں رفتہ رفتہ تمام طلبہ پر سبقت لے گیا - بعد اسکے ۱۸ برس کی عمر میں نیوٹن کے کیمبرج کے ترینٹی کالج میں پڑھنا شروع کیا - یہاں ڈائریکٹر کے فیضان تعلیم سے نیوٹن نے باضیات میں بڑی ترقی کی - اس حکیم کے معمولات سے تھا کہ جن کتابوں کو وہ پڑھتا جاتا تھا اُن پر اپنی شرح اور حاشیہ بھی چڑھایا کرتا تھا - ۲۲ برس کے سن میں نیوٹن کو بی - اے - کا درجہ حاصل ہوا *

C

20)

جو آدمی دنیا کے حالات پر کبھی غور نہیں کرتا اُس سے زیادہ بڑی بے وقوف نہیں ہے - اور غور کرنے کے واسطے دنیا میں ہزاروں طرح کی باتیں ہیں - لیکن سب سے عمدہ اور ضروری آدمی کی حالت ہے - غور کرنا چاہئے کہ جس روز سے آدمی پیدا ہوتا ہے زندگی میں مرنے تک اسکو کیا کیا باتیں پیش آتی ہیں اور کیونکر اُسکی حالت بدلاؤتی ہے - انسان کی زندگی میں سب سے اچھا وقت لڑکپن کا ہے - اس عمر میں آدمی کو کسبِ فی طرح کی فکر نہیں ہوتی - ماں باپ بہایت شفقت اور محبت سے اُسکو پالتے ہیں اور جہاں تک بس چلتا

ہے آرام دیتے ہیں۔ اولاد کے اچھا کھانے اچھا پہننے سے ماں باپ کو خوشی ہوتی ہے۔ بلکہ ماں باپ اولاد کے آرام کے واسطے اپنے ازیں تسلیف اور رنج گوارا کر لیتے ہیں۔ مرد جو باپ ہوتے ہیں کوئی ت اور مزدوری سے کماتے ہیں کوئی پیشہ کرتے ہیں کوئی وداری کوئی نوکری غرض جس طرح بن پڑتا ہے اولاد کی آسائش کے واسطے روپیہ پیدا کرے میں کوتاہی نہیں کرتے *

TRANSLATION FROM KHASI INTO ENGLISH

Paper-setter— MR. ROY ROWLAND THOMAS, M. A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Translate the following passages into English :

40

(a) Kata baroh kaba long : bad bun ruh kaba mem shym la ong. Hynrei uta u Sviem uba nga shakri bad burom u long uba isynci bad uba klof ban map. Nalor kata ruh. kine ki jingtlot ki la ngat ha nga ha ka ri jong me : doi hangta kein ba nga la kjit ia ki. te nga la lyniar hapoh jong ki, bad nga la sugewsih sat namar jong ki, bad nga la ioh map na ai u Sviem.

(b) Namar ngi long ki mraw. pynban U Blei jong ngi um shym la iehnoh ia ngi ha ka jinglong mraw jong ngi, hynrei u la ai ia ka jingisynci ia ngi ha khmat ki syiem Persia, ban ai ka jing shongthait ia ngi. ban pynieng ia ka ing U Blei jong ngi, bad ban shua pat ia ka jing jot jong ka, bad ban ai ka kynroh ha ngi ha Judah bad ha Jerusalem.

(c) Ka masi ka long kawei na ki murad kiba donkam eh ia u briew. Ka long kaba jemnud shibun hynrei ka long ruh kaba duna jabien. Ka dud jong ka ka long ka jingbam kaba bha tam eh ia ki briew kiba tlol ka niemoth. Ka eit jong ka ka long ka shoh kaba bha eh namar ka jingrep. Namar lane lehse ki Hindu ki khein ia ka kaba kyntang.

TRANSLATION FROM LUSHAI INTO ENGLISH

Paper-setter—REV. E. L. MENDUS, B.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Translate *two* only of the following passages into English :

20

(a) Kristiana leh Beiscia chuan an han en a ; nimahsela a hma a beramputen thil an lo entir khu an rilru-ah a la chām reng a, churang chuan an kut a khûr a, an en tha thei mang lo va. Nimahsela kawt hung kawngkhar ang deuh leh a hmun ropui zia thenkhat te chu hmu ang rengin an in hria a, chutichuan an kal leh ta a. An kal pah chuan hla an sa ta a :

‘Berampute thu ro hlû chu,
Mite hriat ngai loh kha ;
Thil thûk leh mak in thukru chu,
Kan hriat in a awm ta ;
Berampute rawn zawt vêl la,
I hmu ang—thil mak kha.’ tîin.

Tin, an inthen dawn chuan berampu pakhat chuan kalkawng ziakna a pe a. Tin, midangin fakedertute laka finkhur turin a zilh a. Tin, midangin mut chhuahna hmun a mu hauh lo turin a zilh bawk a. Tin, pakhat chuan, ‘Pathian hrui in dam takin kal ang che u,’ a ti a. Chutichuan ka mu chu ka thang hach ta a.

(b) Chinghne pakhat hianin beram vun a há a, beram zing ah a kal ve a, beram chu bumin tamtak a tihlun ta a. Tin, berampu chuan, chutia a beram tamtak a bo ta chu engtiza ni maw, ti-in mak a ti em em thin a, a tawp ah chuan a hre ta a ; chu chinghne beram vun há chu hrutizin a ngahwng ah a hling a, thingzâr ah chuan a khái hlun ta a. Tin, berampu thenkhat chumi kawng lamah chuan an lokal a, an hmu chuan beram a khai hlun emaw an ti deuhva, ‘Engtizia nge mûapa, beram a ni lâwm ni, i khái ?’ an ti a. Chu berampu chuan, ‘Ni love, chinghne beram vun sin ka mau a, ka khái a nih hi,’ a ti a. Tin, an diklozia a entir a ; tin, a thiltih felzia chu an fak ta a. 20

(c) ‘Hmanlaia thute i ngaihtuah ngai lo maw ?’ Finkhuri chuan a ti a. Kristiana chuan, ‘Ngaihtuah thin e, nimahsela chumi tih chu ka duh lo em em mai a, ni. Taksa thu ngaihtuahna, ka thiante leh keimah pawh kan lawma ber thin lek phei chu ka duh lo zual a ni. Chung thil zawng zawng te chu tumah chuan ka lungguhna an lo chang zo ta vek mai. Ka duhber thil hi thlang thei dawn ni ila, chutiang thil chu ngaihtuah tawh hauh lo turin ka thlang ang. Thil tha bera ka rin pawh a tha lo ber a lo ni leh mai si thin,’ a ti a.

‘A chângin chung ang thilte chu bo tawh ang leh a chângin i buaina thin niin i hre ngai em ?’ Finkhuri chuan a ti a.

Kristiana chuan, ‘Hre thin e ; nimahsela chu zawng khât tak a ni ; chutiang hun chu ka tân hun lâwmawm a ni,’ a ti a. 20

TRANSLATION FROM GARO INTO ENGLISH

Paper-setter—MISS CHARLOTTE A. WRIGHT, B.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate the following passage into English : 20

Indake sal runtahaoa, pile Aual Gunalko anggal sona burungchi rimangtaiaha. Burungona soko, aolko mandesa choe, ambolko akolo gapeba, uni kosako mandesa ongpile gataha aro waal soaha. Jensalo waal namen chingchaha, Aual Gunalko namedake ambolko snilchina aganaha aro Gunal bauntate suilatmitingon Aual uko waalchi jitpakataha aro boltongrangko uni kosako bange sinjete done atangde noktangchina rebaha,

2. Translate the following passage into English : 20

Dao Jihovani mikkango chadengna Isolni depanterangni rebaani sal ongahaon. Satanba uamangni gisepo rebaha. Aro Jihova Satanna aganaha, Naa baoni rebaha ? Aro Satan Jihovana aganchake inaha, Aao rejoyaoni, aro uano reroraooni. Aro Jihova Satanna aganaha, Naa angni nokol Jobko gisik nangahama ? ugita, namsranggipa aro sronggipa, Isolna kengipa aro namgijako gelgipa, aao darangba dongja ine nikahama ? Unon Satan Jihovana aganchake inaha, Indinari Job Isolna kenama ? Naa uko, aro uni nokko, aro uni gnang pilakkon santangtangchin kila kadulkujana ? Uni jakrangni kamko naa patiaha, aro uni jillanirang aao gipaha.

3. Translate the following passage into English : 20

Sivaji daode Moghul generalrangchisa chaskana tariskaaha. Ua Aurangzebko mitchiaha aro matchurangko sootgipa aro torom nokrangko pigiparanggioniko antangtangni miterang aro torom nokko rakina gita antangni asongoni manderangko okamaha. Maharajani mamatang chongmot, Shayista Khanko Deccanona Sivajiko warachakchina watataha, indiba ua antangni janggiko gimaatnasiahachim. Atam sao Sivaji aro uko jurikgiparang bia kaani dol gita tarie Poonao napaha. Andalahaon uamang Moghul generalni dongramona bablisi janggilchipakni dogachol gita nappretangaha. Shayista Khan tusiaoni mikrake jenetenesa antangni turamoni ongkate katna manaha.

TRANSLATION FROM FRENCH INTO ENGLISH

Paper-setter—MR. NAGENDRANATH CHANDRA, M.A.

Candidates are required to give their answers in their own words as far as practicable,

The figures in the margin indicate full marks.

1. Translate into English any *two* of the following passages :—

(a) Il faisait beau. L'air était tranquille : on voyait s'élever toute droite la fumée bleue d'une usine. Un enfant, la tête penchée en arrière, regardait monter ce nuage transparent.

—A quoi penses-tu ? lui dit son père.

—Où va donc le nuage de fumée ? Que deviendra-t-il là-haut ?

—Ce nuage, qui referme en son sein de la vapeur d'eau, se mélangera là-haut avec les autres nuages ; comme eux, il voyagera ça et là, porté par le vent ; comme eux, il reviendra vers nous un jour, sous forme de pluie, ou, s'il fait froid, et que les gouttes de pluie gèlent en chemin, il se changera en légers flocons de neige.—Aimerais-tu, dis-moi, à monter comme le nuage et à voyager avec lui dans le ciel ?

—Si c'était possible, quel bonheur ce serait !

—Mon ami, les hommes savent monter sur le dos du nuage de fumée, et voyager avec lui. 20

(b) Le petit Dick chantait ou sifflait à peu près tout le jour ; c'était un enfant gai et heureux. 20

Un jour, il s'aventura dans une forêt à quelque distance de sa demeure. Il avait été bien souvent jusqu'à la lisière de cette forêt, mais elle lui avait semblé si noire qu'il n'avait jamais osé y entrer. Dick était plus gai ce jour-là que de coutume. Il trouvait le soleil si brillant, l'ombre si douce, les fleurs si belles, qu'il chantait et sifflait de manière à faire retentir la forêt. Il s'amusa quelque temps parmi les fleurs, et les arbres, et se félicitait d'avoir pénétré dans un endroit si délicieux. Un petit ruisseau serpentait en gazouillant et les eaux en paraissaient si claires que Dick, attiré par leur limpidité, se baissa pour boire. 20

(c) Le régiment est en marche, et soulève d'un pas régulier la poussière du chemin. 20

Où allez-vous, mes amis ?—'Nous n'allons point conquérir injustement des pays voisins ; nous n'allons point porter nous-mêmes la dévastation en terre étrangère, et faire haïr le nom français ; mais on a attaqué la France et de

toutes parts les armées étrangères sont descendues sur notre sol : alors nous nous sommes levés pour défendre notre liberté. En avant !'

Le tambour a retenti, et le régiment s'est remis en marche : à la tête du régiment quel est ce petit homme dont le tambour, vibrant si vigoureusement sous les doigts, marque le rythme de la marche et fait oublier aux soldats la fatigue ?

Ce n'est pas encore un homme : c'est un enfant de douze ans, Joseph Barra.

20

TRANSLATION FROM PORTUGUESE INTO ENGLISH

Paper-setter—DR. P. D. BRAGANCA CUNHA

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Translate into English any *two* of the following passages :—

(a) 'A força de vontade tudo se consegue' e uma máxima antiga, sim, mas nem por isso menos verdadeira.

Todo aquelle que se determina a fazer uma coisa, com o simples facto de se ter assim determinado, minoralhe as difficuldades e assegura a sua effectuação.

Julgar-se um homem com aptidão para qualquer empresa é quasi tel-a com effeito ; forinar a resolução de realisar um progresso qualquer, equivale frequentemente a tel-o ja realisado. E eis razão por que a resolução e a energia se assemelham de alguma sorte a omnipotencia.

20

(b) Helena Graves era tudo para seu pai, pois o casamento do general havia sido infelix e tivera um fim tragico. Sua esposa, filha dum negociante judeu em Madrastra, era dotada dum caracter forte e duma grande beleza, mas de fracos principios morais. Casaram na India, onde ele se encontrava, como Major, com um batalhão do seu regimento, e la lhes nasceu a sua filha unica, Helena.

20

(c) Sentir-se uma pessoa feliz é já ser feliz, e Tora julgava-se a mulher mais feliz do mundo. As semanas que precederam o seu casamento foram o periodo mais luminoso da existencia do seu coração. Contava os dias que lhe iam ficando para tras e trazia sempre presente a distancia a que estava do dia querido entre todos os dias, e, todas as manhãs, quando acordava, dizia consigo :—Agora só dezanove dias, e depois dezoito, dezassete, dezasseis, até ficar reduzida a conta a tres, dois, e um finalmente.

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TRANSLATION FROM KANARESE INTO ENGLISH

Paper-setter—MR. P. APPAJI RAO, B.SC.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Translate any two of the following into English :—

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(a) ದಮಯಂತಿಗೆ ಆ ರಾಜನಲ್ಲಿ ಉಂಟಾದ ಬೇಸರವನ್ನು ತಿಳಿದು ಸೇವಕರು ಆಕೆಯ ಸಿವಿಗೆಯನ್ನು ಬೇರೆಕಡೆಗೆ ಒಯ್ದರು. ಸಮರ್ಥರಾಗಿಯೂ ನಿಷ್ಪ್ರಬಲಿಗಳಾಗಿಯೂ ಇರುವ ಭೃತ್ಯರು ಕಾರ್ಯಗಳನ್ನು ನಡೆಯಿಸುವವೇಳೆ ಯಜಮಾನರು ಆಗಾಗ ಅವುಗಳನ್ನು ಕೊಡುವ ಅವಶ್ಯವೇ ಇರದು. ಭಗವತಿಯಾದ ಭಾರತಿಯು, ರೂಪದಲ್ಲಿ ಅಶ್ವಿನೀ ದೇವತೆಗಳನ್ನು ತಿರಸ್ಕರಿಸತಕ್ಕ ಬೇರೊಬ್ಬ ರಾಯನನ್ನು ದಮಯಂತಿಗೆ ತೋರಿಸಿ, "ರಾಜ ಕುಮಾರಿ! ಈ ರಾಯನು ಬಹಳಶೀಲವಂತನು. ಇವನನ್ನು ಒಮ್ಮೆಯಾದರೂ ತಲೆಯತ್ತಿ ನೋಡು. ವತ್ಸೆ! ಇವನ ಮುಂಗಡೆ ಶ್ರಮವಿಲ್ಲದೆ ಹೊಗಳುತ್ತಿರುವ ಸ್ತುತಿಪಾಠಕರ ವಾಗಾಡಂಬರದಿಂದ ಶಬ್ದಗುಣವುಳ್ಳ ಈ ಆಕಾಶದಲ್ಲಿ ಅವಕಾಶವಿಲ್ಲದಂತಾಗಿರುವುದು. ಹೀಗಿರುತ್ತ ನನ್ನ ಮಾತುಗಳಿಗೆ ಎಲ್ಲಿ ಅವಕಾಶವು ದೊರೆಯುವುದು? ಅಲ್ಲದೆ, ನಾನು ಈ ರಾಜನ ವಿಷಯವಾಗಿ ಏನು ಹೇಳಿದರೂ ಅದು ಪುನರುಕ್ತಿಯಾಗುವುದಲ್ಲದೆ ನನ್ನ ವಾಕ್ಯಗಳಿಗೆ ಪ್ರಯೋಜನವಿಲ್ಲದೆ ಹೋಗುವುದು. ಹವ್ಯನೆಂದು ಪ್ರಸಿದ್ಧವಾದ ಹೆಸರಿರುವ ಶಾಕದ್ವೀಪಾಧಿಪತಿಯಾದ ಈ ರಾಜನ ವಿಷಯದಲ್ಲಿ ಮಹಾ ವಿದೂಷಿಯಾದ

ನಿನ್ನ ಅಂತರಂಗದಲ್ಲಿ ಈತನ ಬಿರುದುಗಳನ್ನು ಹೊಗಳುತ್ತಿರುವ ವಂದಿಗಳ ವಾಕ್ಯಗಳಿಗೆ ಅವಕಾಶವು ದೊರೆಯಲಾರದೇ? ಆ ಶಾಕವ್ಯವಿವರಣೆಯಲ್ಲಿ ಗಳಿಯ ರಕ್ತಗಳಂತೆ ಹಸುರಾದ ವ್ರತಗಳನ್ನು ಧರಿಸಿರುವ ಶಾಕವ್ಯವಿವರಣೆಯ ವ್ರತಗಳ ಹಸುರು ಬಣ್ಣದಿಂದ ದಿಕ್ಕುಗಳಿಲ್ಲಾ ಹರಿದ್ವರ್ಣವಾದ ಕಾರಣ, ದಿಕ್ಕುಗಳಿಗೆ ಹರಿತ್ ಎಂಬ ಹೆಸರೇ ಪ್ರಸಿದ್ಧವಾಯಿತು. ಈ ರಾಜನನ್ನು ವರಿಸಿ ಆ ಶೋಭೆಯನ್ನು ನೋಡುವ ಇಷ್ಟವು ನಿನಗಿಲ್ಲವೇ? ಅಲ್ಲದೆ, ಆ ಶಾಕವ್ಯವಿವರಣೆಯ ವ್ರತಗಳಿಂದ ಹುಟ್ಟಿ ಬರುವ ದಿವ್ಯವಾದ ಮಂದಮಾರುತನ ಸ್ಪರ್ಶದಿಂದ ಯಾರಿಗೆ ಅನಂದವಾಗಲಾರದು? ಈ ಅನಂದವನ್ನು ಅನುಭವಿಸಿ, ಹೇ ದೇವಿ! ಪರಾಶರ ಯುಷಿಯು ವಿಷ್ಣು ಪುರಾಣದಲ್ಲಿ ಹೇಳಿದ —

ಶಾಕವ್ಯವ್ರತ ಮಹಾ ವೃಕ್ಷಃ ಸಿದ್ಧಗಂಧರ್ವ ಸೇವಿತಃ |

ಯತ್ ಪತ್ರವಾತ ಸಂಸ್ಪರ್ಶಾದಾಹ್ಲಾದೋಜಾಯತೇ ಪರಃ ||

ಎಂಬ ವಾಕ್ಯದಲ್ಲಿ ಶ್ರದ್ಧೆಯನ್ನಿಡುವವಳಾಗು.

(b) ಪಾಶ್ಚಾತ್ಯರಲ್ಲಿ ವಿಜ್ಞಾನವು ವಿಶೇಷವಾಗಿ ಅಭಿವೃದ್ಧಿಹೊಂದಿರುವುದಕ್ಕೆ ಅನೇಕ ಕಾರಣಗಳುಂಟು. ಅವನ್ನು ಈ ಸಂದರ್ಭದಲ್ಲಿ ವಿಚಾರಿಸುವ ಅವಶ್ಯಕತೆಯಿಲ್ಲ. ಅಕ್ಷರ ಜ್ಞಾನವು, ಆ ದೇಶಗಳ ಸಾಮಾನ್ಯ ಜನರಲ್ಲಿಯೂ ಅಧಿಕವಾಗಿ ಹರಡಿರುವುದರಿಂದ, ಜನರಿಗೆ ತಮ್ಮ ಜ್ಞಾನವನ್ನು ಹೆಚ್ಚಿಸಿಕೊಳ್ಳಬೇಕೆಂಬ ಕುತೂಹಲವು ಹೆಚ್ಚಾಗಿರುವುದು. ಈ ಕುತೂಹಲವನ್ನು ಪೂರೈಸಿಕೊಳ್ಳಲು ಎಲ್ಲ ಬಗೆಯ ಗ್ರಂಥಗಳು ಹೇರಳವಾಗಿರುವುವು. ನಮ್ಮ ಭಾರತ ದೇಶದಲ್ಲಾದರೂ ಸಾಮಾನ್ಯವಾಗಿ ನೂರು ಮಂದಿಯಲ್ಲಿ ತೊಂಭತ್ತೈದು ಮಂದಿಗೆ ಓದು ಬರಹ ಬರುವುದಿಲ್ಲ. ಇಂಥವರಿಗೆ ಪುಸ್ತಕಗಳಿಂದ ಪ್ರಯೋಜನವೇನು? ಅದುದರಿಂದ ಅಂತಹ ಗ್ರಂಥಗಳನ್ನು ಬರೆಯುವವರೂ ವಿರಳ. ಇದೂ ಅಲ್ಲದೆ ಭಾರತೀಯರಲ್ಲಿ ವೈಜ್ಞಾನಿಕ ಜ್ಞಾನವೂ ಕಡಿಮೆ. ಆಧುನಿಕ ಪಾಶ್ಚಾತ್ಯರಲ್ಲಿ ಭೌತಿಕ ವಿಜ್ಞಾನ, ರಸಾಯನ ವಿಜ್ಞಾನ, ಜೀವ ವಿಜ್ಞಾನ, —

ಇನ್ನೇ ಮೊದಲಾಗಿ ಪ್ರತಿಯೊಂದು ವಿಜ್ಞಾನವು ಬೆಳೆದು ಒಂದೊಂದನ್ನು ಅಧ್ಯಯನ ಮಾಡುವುದಕ್ಕೆ ಒಂದು ಆಯಸ್ಸು ಕೂಡ ಸಾಲದಂತಿದೆ. ಅವರ ಅಧುನಿಕ ನಾಗರಿಕತೆಗೆ ಅವರ ವೈಜ್ಞಾನಿಕ ಕೌಶಲವೇ ಮೂಲ. ಎಷ್ಟೋ ಮಂದಿ ತಮ್ಮ ಯಾವಜ್ಜೀವನವನ್ನೂ ವಿಜ್ಞಾನ ವ್ಯಾಸಂಗಕ್ಕೆ ಧಾರೆಯೆರೆದು ಕೊಟ್ಟು ನಿರಂತರ ದುಡಿಯುತ್ತಿದ್ದಾರೆ. ಹಾಗೆ ಮಾಡಲು ಎಲ್ಲರಿಂದಲೂ ಸಾಧ್ಯವಿಲ್ಲ. ಆದರೆ ಎಷ್ಟೋ ಮಂದಿಗೆ ಯಾವಯಾವ ವಿಜ್ಞಾನದಲ್ಲಿ ಯಾವಯಾವ ನೂತನ ವಿಷಯಗಳು ಕಂಡು ಹಿಡಿಯಲಾಗಿದೆಯೆಂಬುದನ್ನು ಅರಿತುಕೊಳ್ಳಲು ಕುತೂಹಲವಿರುವುದು. ಅಂತಹವರ ಕುತೂಹಲವನ್ನು ತಣಿಸುವುದಕ್ಕಾಗಿ ವ್ರಸಿದ್ಧ ವೈಜ್ಞಾನಿಕರಿಂದ ಅವರವರು ಅಧ್ಯಯನ ಮಾಡಿದ ವೈಜ್ಞಾನಿಕ ಗ್ರಂಥಗಳು ಸಾಮಾನ್ಯರಿಗೂ ಸುಲಭ ಗ್ರಾಹ್ಯವಾಗುವಂತೆ ರಚಿತವಾಗಿವೆ.

(c) ಸಾಹಿತ್ಯವು ರಾಜಾಶ್ರಯವನ್ನು ಪೂರ್ವದಿಂದಲೂ ಅನುಸರಿಸಿರುವುದೆಂಬುದು ಎಲ್ಲರೂ ಬಲ್ಲ ವಿಷಯ. ಎಲ್ಲಿ ಪ್ರಬಲವಾದ ರಾಜಾಸ್ಥಾನವೋ ಅಲ್ಲಿ ಪ್ರೌಢ ಸಾಹಿತ್ಯ. ಸಾರ್ವಭೌಮರು, ಮಹಾಮಂಡಲೇಸ್ವರರು, ಪ್ರಧಾನರು, ದಂಡನಾಯಕರು, ಮುಖ್ಯಮಂತ್ರಿಗಳು, ಯೋಗಿಗಳು ನೆಲೆಸಿರುವ ಸ್ಥಳಗಳಲ್ಲಿ ದೇಶದ ಹಿತಚಿಂತಕರಾದ ವಂಡಿತರೂ ಕವಿಗಳೂ ಒಂದು ನೆರೆಯುವರು. ಸಾಮ್ರಾಜ್ಯಲಕ್ಷ್ಮೀ ಒಂದು ಕಡೆ ಬಹುಕಾಲ ನೆಲೆಸಿರುವಳಲ್ಲವಾದುದರಿಂದ ರಾಷ್ಟ್ರಕೂಟರ ಮತ್ತು ಚಾಲುಕ್ಯರ ಆಧಿಪತ್ಯದಲ್ಲಿ ಉತ್ತರ ಕರ್ಣಾಟಕವೇ ಕನ್ನಡ ಸಾಹಿತ್ಯಕ್ಕೆ ಅಸ್ತಿಭಾರವನ್ನು ಹಾಕುವ ಪುಣ್ಯವನ್ನು ಪಡೆಯಿತು. ಗಂಗೆಯ ಉನ್ನತಸ್ಥಿತಿಗೆ ಬಂದಮೇಲೆ ಜೈನರ ವವಿತ್ರಕ್ಷೇತ್ರವಾದ ಶ್ರವಣಬೆಳ್ಳೂಳದ ಅಭ್ಯುದಯದ ದಿವಸಗಳಲ್ಲಿ ದಕ್ಷಿಣ ಕರ್ಣಾಟಕಕ್ಕೂ ಸಾಹಿತ್ಯ ಸೇವೆಯನ್ನು ಮಾಡುವ ಅದೃಷ್ಟವೊದಗಿತು. ಕಾಲ ಪರಿವರ್ತನೆಯಿಂದ ಕಳಚೂರು ಉತ್ತರದಲ್ಲಿ, ಹೊಯ್ಸಳರು ದಕ್ಷಿಣದಲ್ಲಿ,

ವಿಜಯನಗರದರಸರು ಉತ್ತರದಲ್ಲಿ, ಮೈಸೂರು ಮಹಾರಾಜರು ದಕ್ಷಿಣದಲ್ಲಿ ಪ್ರವೃದ್ಧಿಗೆ ಬಂದ ಬಂದ ಹಾಗೆಲ್ಲಾ ಒಮ್ಮೆ ಇತ್ತಕಡೆ ಒಮ್ಮೆ ಲತ್ತಕಡೆ ಸಾಹಿತ್ಯದ ತಲೆ ತೂಗುತ್ತಿತ್ತು. ಒಟ್ಟಿನ ಮೇಲೆ ೧೦ನೇಯ ಶತಮಾನದಿಂದ ೧೭ನೇಯ ಶತಮಾನದ ವರೆವಿಗೂ ಸಾಹಿತ್ಯಕ್ಕೆ ಹೆಚ್ಚು ಸೇವೆ ಉತ್ತರ ಕರ್ಣಾಟಕದಿಂದಲೇ ನಡೆಯಿತು; ನಾಗಚಂದ್ರ, ಲಕ್ಷ್ಮೀಶ ಮುಂತಾದ ಚರ್ಚಾಸ್ಪದರಾಗಿರುವ ಕೆಲವು ಕವಿಗಳನ್ನು ಬಿಟ್ಟರೆ ಪಂಪ, ಪೊನ್ನ, ರನ್ನ, ಮಧುರ, ರತ್ನಾಕರ, ಬಸವೇಶ್ವರ, ಹರೀಶ್ವರ, ರಾಘವಾಂಕ, ಚಾಮರಸ, ಭೀಮ, ವಿಠಲಾಚಾರ್ಯ, ಕುಮಾರವ್ಯಾಸ, ಕುಮಾರವಾಲ್ಮೀಕಿ, ನಿತ್ಯಾತ್ಮಜುಕ, ಮುಂತಾದ ಉದ್ಭೂತಕವಿಗಳು ಉತ್ತರ ಕರ್ಣಾಟಕದವರು; ಚಾವುಂಡರಾಯ, ನಾಗವರ್ಮ, ನೇಮಿಚಂದ್ರ, ಜನ್ನ, ಮಲ್ಲಣಾರ್ಯ, ಪಡಕ್ಷರೀ, ರುದ್ರಭಟ್ಟ, ಮುಂತಾದವರು ದಕ್ಷಿಣ ಕರ್ಣಾಟಕದವರು. ಸ್ಥಳದೃಷ್ಟಿಯಿಂದ ಮಾತ್ರ ಈ ವಿಭಾಗವನ್ನು ನಾನು ಹೇಳುತ್ತಿರುವುದು. ಕರ್ಣಾಟಕಸೇನಾದೃಷ್ಟಿಯಿಂದ

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TRANSLATION FROM MODERN TIBETAN INTO ENGLISH

Paper-setter—MR. KARMA SAMDON PAUL

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Translate into English any *two* of the following passages :—

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(a) ཀྱི་མ་འཁོར་བའི་ཕྱག་བསྐྱེད་མཐུན་དག་ལ། ཀྱི་དྲུད་ ཀྱི་དྲུད་ཇི་ལྟར་བྱས་ན་
ཡན། འདྲོད་ཡོན་མེ་ཐུང་འབར་བའི་གོང་བྱིར་ན། བདག་འཛིན་ཁྱོད་དང་མ་བྲལ་སྟོང་རེ་ཇེ།
འཁོར་བ་མཐུན་མེད་འོ་བས་ཀྱི་མེ་ཐུང་ལ། གང་དུ་བཞུགས་ཀྱང་ཐར་པ་མི་འདུག་པས།
ཁྱམས་གསུམ་འཁོར་བའི་སེམས་ཅན་སྟོང་རེ་ཇེ། བྱས་ཀྱང་ཟིན་མེད་འཇིག་རྟེན་བྱ་ལས་ལ།
ཟིན་དུས་མེད་པའི་ཕྱག་བསྐྱེད་སྟོང་རེ་ཇེ། བཟའ་མི་ཕྱག་བསྐྱེད་སེམས་ཀྱི་འབྲུམ་སྟངས་ལ།
གདན་དུ་འགྲོགས་སུ་རེ་བ་སྟོང་རེ་ཇེ། ཡ་ཡུལ་འབྲོག་པའི་འབྲང་ས་ལྟ་བུ་ལ། བདག་འཛིན་
ཞེན་ཆགས་བྱེད་པ་སྟོང་རེ་ཇེ། འགྲོ་དུག་སེམས་ཅན་ཡ་ས་སྤྱི་མཐུན་ལ། རང་གཞན་གཉིས་
སུ་འབྲེད་པ་སྟོང་རེ་ཇེ། ॥ ॥

(b) བྱ་སྟགས་གཉེན་ལ་བྱམས་དྲག་ངན་སྤྱོད་ཡོང་། དབྱ་ལ་ཉ་ཅང་མུང་ན་རང་ལ་
མཛུངས། གཉེན་ལ་རལ་སྟོད་ཆེན་ནམ་ཕྱགས་འཁོན། བྱ་ལ་འབར་ག་ཆེན་འཁོར་
སྐལ་དཀོན། འཁོར་ལ་ཆེ་ཆེར་རྩལ་ན་སྟོང་སྟུན་འཇུག། ཁྱོགས་ལ་ངན་ཆེན་མང་ན་ཞེ་
བཞག་ཡོང་། དཔེར་ངན་གཞན་ལ་གདོད་ན་རང་ལ་འཁོར། ཁ་དབྱ་མི་བསག་གནག་པ་
སེམས་ལ་ཞོག། གཉེན་ལ་མི་བསྟོད་བྱམས་པ་ཡོད་ལ་འཛིན། ॥ ॥

(c) རི་ནམ་མོར་བྱ་རིན་པོ་ཆེ་མཆོང་གི་གཏུང་ནང་དུ་བཅུག་ནས། སྤང་པོ་ཆེ་གཅིག་
 དང་བཅས་པ་བྱས་ཟེལ་གནང་ནས། འདི་སྐད་ཅེས་གསུངས་སོ། ལེགས་ལྡན་བྱས་ཟེལ་ཆེན་
 པོ་དེ་བཞིང་ཞིག། གཞན་ནུ་ཕྱོགས་ཙལ་ལྡན་པའི་སྤང་ཆེན་ལ། དབྱང་འཛམས་འདོད་
 དགའི་གདེར་ཆེན་མགོགས་པར་བཀལ། གལ་དེ་ཡབ་ཀྱིས་གསན་ན་ཇེས་བསྟེགས་ནས།
 མོར་བྱ་སྤང་པོ་ཆེ་དང་བཅས་པ་འཕྱོག། འཕྱོག་པས་སི་ཚོག་ཏྱེད་རང་སྟོག་དང་འབྲལ། ལེ་
 ལོ་སྤོང་ལ་བཙོན་འབྲས་ལས་དུ་བཞུད། རང་གཞན་གཉིས་ཀྱི་དོན་ཆེན་འབྲུག་པར་མཛོད།
 ཅེས་གསུངས་སོ།

སྤང་ཡང་སྟོན་ལས་འདི་སྐད་བདབས་སོ། ཕྱོགས་བཅའི་རྒྱལ་བ་སྤྲས་དྲང་བཅས་
 པ་རྣམས། དེ་དག་ཐམས་ཅད་བདག་ལ་དགོངས་སུ་གསོལ། བདག་གིས་འགྲོ་བའི་ཅི་བསམ་
 གུབ་པ་དང་། ཐེག་ཆེན་ཆོས་ཀྱི་སྦྱོན་པ་ཇོགས་པའི་ཕྱིར། དབྱང་འཛམས་གཞན་གྱིས་
 འཕྱོག་པར་མ་བྱུང་ཞིག། མཐའ་འཁོབ་བྱེ་མའི་ཡུལ་དུ་སྟེབ་པར་ཤོག། ཅེས་སྟོན་ལས་
 བདབ་ནས་ཕོ་བྲང་དུ་ལོག་པེབས་སོ།

TRANSLATION FROM BURMESE INTO ENGLISH

Paper-setter—MAUNG BA, B.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Translate any two of the following passages into English :—

40

(a) ထိုအခါရနပ်ရာသောသင်္ဘောသားတို့သည်သေအံ့သောဘေးမှ ကြောက်လန့်ကုန်သဖြင့်ငိုကြွေးမြည်တမ်းကြကုန်လျက်၊ အချို့သောသင်္ဘောသားတို့သည် မိမိတို့အလိုရှိရာအသီးအသီးနတ်တို့ကိုကိုးကွယ်၍ ခိုးကြကုန်၏။ ဘုရားလောင်းမင်းသားမူကား၊ ရောက်လာသောသေကိုငိုကြွေး၍လွှတ်နှိုင်းမည်မဟုတ်။ အားထုတ်အပ်သောယောက်ျားတို့၏အစွမ်းသာလျှင်ဘေးထွက်ကြောင်းဖြစ်၏ဟုနှလုံးစွဲယူတော်မူသဖြင့်၊ ငိုကြွေးခြင်းကိုမပြု၊ ဥပါဒ်ထွက်ကြောင်းမဟုတ်၍ သမုဒ္ဒရာနတ်ကိုလည်း၍ မခိုးဆဲပျဉ်ကွဲ၍ သင်္ဘောနပ်မှန်းသိလျှင်၊ ထောပတ်သစ်ကိုသကြားနှင့်နယ်၍ ဝစ္စာစားပြီးသော်၊ နိုင်နံ့ညံ့မှတ်သောပုဆိုးနှစ်ထည်ကိုရေမဝင်စေခြင်းငှါ ဆီဆွတ်ကာဖြီစွာဝတ်၍၊ လင်းယဉ်ထိုင်ကိုမှီလျက်ရပ်နေသဖြင့်၊ သင်္ဘောမြုပ်သောအခါ၊ လင်းယဉ်ထိုင်ထက်သို့တက်လေ၏။ သင်္ဘောသားနှစ်ရာတို့သည်လည်းယောက်ျားတို့၏ထံလက်မပြုကြဘဲ၊ မိုးရိပ်ကြောက်လန့်ခြင်းပြင်းစွာနှင့်ပင်ငိုကြွေးမြည်တမ်းလျက်၊ ငါး၊ ယိပ်၊ မကရုံးတို့၏အစာဖြစ်လေကုန်၏။

(b) ရှမ်းများသည်-မြန်မာပြည်တွင်း သို့ဝင်ရောက် ဂြိနှင့် ဖြစ်သော်လည်း၊ မြန်မာပြည်ခြောက်ထက် နှင့် အရှေ့ဘက် ရှိတောင် ကုန်းများပေါ်၌သာ ရှိနေကြသေးသည်။ သက္ကရာဇ် ၁၂၀၀ ကျော်လောက်တွင် ဗုလွင် မြင်သို့ဝင် ရောက် ဝပြုကြရာ၊ အချို့မှာတောင် ဘက်သို့ ၎င်း၊ အချို့မှာအရှေ့ဘက် သို့ ၎င်း၊ အချို့မှာအနောက်ဘက် သို့ ၎င်း၊ ရောက်ကြသည်။ အာသံပြည် ရှိအဟုံးတိုင်းပြည်ကို ၁၂၉၉ ခုမှာတည်ထောင်ကြသည်။ ထိုအခါလောက်မှာပင်၊ အချို့မှာတနင်္သာရီသို့ရောက်ကြ၍၊ အချို့မှာယိုးဒယားပြည်သို့ရောက် ဖြီးလျှင်၊ ၁၃၅၀ ခုနှစ်မှာယိုးဒယားပြည်ကိုတည် ထောင် ကြလေသည်။ ဤအခါတွင်ရှမ်းများက တထိုင်းနှင့် မြန်မာကိုထွမ်းမိုးလေသည်။ ပုဂံမင်းထက် ဖြတ်သောအခါ၊ ရှမ်းအနွယ် ဖြစ်သူများသည်၊ မြန်မာပြည်ကိုဝေ၍ အုပ်ချုပ် ကြလေသည်။ မင်း ဩစွာစော်ကဲထက် ထက်တွင် မြန်မာနှင့် တလိုင်းစစ်ဖြစ် ခြင်းမှာ၊ ရှမ်းများက၊ အထက်မြန်မာပြည်ကိုထွမ်းမိုးလာသောကြောင့်၊ ၎င်းမြန်မာများကတလိုင်းကိုထွမ်းမိုးရန် ကြံရွယ်ရင်းအတိုင်းစစ်ဖြစ်ရလေသည်။

(c) ရှေးအထက် ကျော်ကာရီကခရီးသွားခြင်း၏အကြောင်းကို ဖြန်လှန်စဉ်းစားလျှင်၊ ယခုအခါခရီးသွားခြင်းသည်၊ မည်မျှလောက်ထွယ်ကုသက်သာ၍ စရိတ်ကြေးငွေအကုန်အကျနည်းပါးကြောင်းကို ထိရှိကြရလိမ့်မည်။ ဤသို့သော အကြောင်းများကြောင့်လည်း၊ ခရီးသွားသူတို့သည်တနေ့တခြားပေါများလာသည်မှန်ကြောင်း၊ ခရီးသွားလာခြင်းသည်၊ သွားလာသူတို့၏ရည်ရွယ်ရင်းအရပ်ရပ်ကိုလိုက်၍ အကျိုးကျေးဇူးဖြစ်ထွန်းစေလေသည်။ စာအုပ်တို့တွင်တွေ့မြင်ရသော အရာအမျိုးမျိုးကိုမျက်စိနှင့်သေချာစွာကြည့်ရှုရသည်ရှိသော်၊ မည်မျှလောက်မြဲမြံစွဲစွဲမှတ်မိနားလည် ကြမည်ကို သိသင့်လှပေသည်။

ပထဝီဝင် မာဇဝင် တို့ ထွင် ဘော် ပြသော အကြောင်းအရာ တို့ကို၊ ဓမ္မိ
 သွားခြင်းဖြင့် ကြည့်ရှု ဆင်ခြင်နိုင်ကြမှု၊ ပညာသင်ကြားခြင်း၏ အကျိုး
 ကို ထိုးတက် ပိုမိုခံစားရ ရာ သည်။ ဓာပာဒ်သော ထိုင်းပြည် နိုင်ငံတို့ထို့
 လှည့်လည် ကြည့်ရှု ခြင်း သည်။ ထိုထိုသော ထိုင်း သူပြည် သားတို့၏
 အသေအထ၊ အပြုအမူ၊ အယူဝါဒ အမျိုးမျိုးကို သေသေချာချာ ရွှေ
 မြင် နိုင် ရာ သည် ဖြစ် သော ကြောင့်၊ ညာဏ် ပညာစိတ် နှလုံးကို၊ ထိုး
 တက်ရင့်သန်၍၊ အမှန်ကို ဆုံးဖြတ် ချင့်ချိန် နိုင် ခြင်း၏ အကြောင်းတရပ်
 ဖြစ်ကြောင်း။

TRANSLATION FROM TAMIL INTO ENGLISH

Paper-setter—M. M. VEDANTAVISARAD N. S. ANANTAKRISHNA SASTRI

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Translate any two of the following passages :—

(a) கௌசிகர் என்பவர் ஒரு ரிஷி. அவருக்கு ஒரு சீடன். அவன் பேர் உத்தாகௌ. குருமனப்படி அவன் நடந்து வந்தான். அவனுக்குப்பெண் ஒன்று அவர் தேடினார். அந்த ஊரிலேயே அவனுக்கு விவாகம் முடித்தார். மனைவியும் நீயும் இந்த ஊரிலேயே வாழ்ந்து வாருங்கள் என்று ஆசிரவதித்தார். அவர்களும் ஒப்புக்கொண்டார்கள். பின்பு அவர் போய்விட்டார். ஒரு நாள் அவன் வீட்டுக்கு அவன் மாமன் வந்தார். அவருக்கு விருந்து பண்ண வேண்டுமென்று அவன் தன் மனைவியிடம் சொன்னான். அதற்கு அவன் மறைத்தான்.

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(b) மறுநாள் ஒரு பெரியவர் வந்தார். அவரை அவனுபசரித்தான். அவருக்கு அன்னம் வழங்கும்படி மனைவியிடம் சொல்ல அவன் மௌனம் சாதித்தான். பின்பு அவனே அவருக்கு அன்னம் படைத்தான். அவள் சண்டிகை, புருஷன் பேச்சுக்கு எதிர்ப்பதும் மாறாக நடப்பதும் அவள் இயற்கை. இதைப்பற்றி அவன் வருந்திக் கொண்டிருக்க, அவன் குரு ஒருநாள் அங்கே சென்றார். அவரிடம் தன் நிலையை விளம்பினான். அவர் புன் சிரிப்பு அடைந்தார். அவனிடம் அன்புடன் சொன்னார். உன் இஷ்டப்படி என்னைவிட நடந்து கொள்ள ஒரேவழியிருக்கிறது, அதாவது உன் எண்ணத்திற்கு மாறுபாடாக நீ அவருக்கு உத்தரவு அளிப்பதே. 20

(c) உறுதியாக அவன் அதைக்கைக்கொண்டான். ஒரு சபதினம் வந்தது. "இன்று இருபது பேருக்கு விருந்து செய்வது ஊர்வழக்கம், நம் வீட்டில் ஒன்றும் செய்யவேண்டாம்" என்று உத்தரவிட்டான். அதற்கு அவள் "நாம் சும்மா இருக்கலாகாது" என்று சொன்னாள். ஊர்முழுவதும் தானே சென்று அழைத்தாள். நல்ல விருந்து செய்தாள். அவனுடைய தகப்பனார்திவசம் வந்தது. "இன்று எந்தகப்பனார் திவசதினம். ஒன்றும் செய்ய வேண்டாம்", என்று அவன் சொன்னான். அதற்கு அவள்— "திவசத்தை நிறுத்தலாம்? பிதுருக்கள் சபியாரா?" என்று சொல்லி அதற்கு வேண்டிய யாவற்றையும் தானே தயார் செய்தாள்! புருஷன் ஸந்தோஷமடைந்தான். தலைகால் தெரியவில்லை. அவள்குணத்தை அவன் மறந்துவிட்டான். "இந்த எச்சில் இலைகளை நாய்கள் தின்னலாகாது. குழியில் போட்டுவிடு" என்று சொன்னான். ஆனால் அவள் குணங்களை அவள் காட்டினாள். எச்சில் இலைகளைக் கட்டிக்கொண்டு வெளியில் வந்து நாய்களுக்கு வைத்தாள். பிதுருக்கள் சபித்தார்கள்.

TRANSLATION FROM NEPALI INTO ENGLISH

Paper-setter— RAI SAHEB HARIPRASAD PRADHAN, M.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Translate into English any two of the following :—

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(a) राजा ले राज-काज को केही पर्वाह न राखी यकी हिसाब ले लक्ष छोडी दिये को न राज्य को दुखी हानी हुन लाग्यो । राज-कार्यकारी हक पनी अत्यन्त खेद गर्न लागे, परन्तु के गहन कर्ष को चूँ बोल्ने सक्न साहस थियेन । प्रायः दुला मानिस हक सर्व स्वाधीन हुन्छन । यसै ले उनी हक आफु समान बुद्धिमान कसै लाई ठान्दैनन । आफ्ना अधीन का कार्यकारी हक संग मती लिये त हावी खाफे रहन्न भन्थान्द उन । तेसो गर्ना ले उनीहक को कमी हानी ह तेस तिर ध्यान दिंदैनन । खाखीर उनी हक पनी त पञ्चतन्त्र ले नै रचित भये का व्यति हुन फिरी भूल गरीइनन भन्ने के प्रमाच ?

(b) संसार मा जति दुःख तथा अपमान खप्नु पर्ने हुन्छ सो प्रायः स्त्री जति हाग नै देखिन पाउँछ । फेरि गृहस्थि को सुख शान्ति सब स्त्री जति मा नै निर्भर छ । आफ्ना घर का स्त्री सञ्चरिवा छन भने गरीप भन्दा गरीप पनी सुखी, घर का स्त्री त दुश्चरिवा तथा कलहा कुलटा छन भने धनी भन्दा धनी पनी दुःखी कहिन्छन । जस्का हात मा आफ्नु मानापमान सुख दुःख निर्भर छ, उनै लाई हामी ले कुन प्रकार को शिक्षा न दिनु हावी कमी भुल हो ? इनीहक लाई हामी ले यथा शक्ति सदुपदेश तथा योग्य शिक्षा दिनु अत्यान्त आवश्यक देखिन्छ ।

(c) एक आफ्नु आखा को आंस पुछ्दै भन्न लाग्यो “पिता जी ? कष्ट सहन सक्ने वय होइन हृदय हो । मेरी मूला ले मलाई अर्का का उपकार निमित्त कष्ट सहन गर्नुत आनन्द दायक हुन्छ भन्ने एक वाजी होइन लाखौं वाजी उपदेश बकिथे को छ । म आफ्ना परिवार का निमित्त, आफ्ना पृथ्व पिता का निमित्त कष्ट सहन सक्तिन भने अर्का का निमित्त बिच संसार का निमित्त, के गर्न सक्छा ? हजारै को प्रभाव ले मैले यी संसार मा जन्म पायें । हजार को कष्ट निवारण गर्नु मरी कर्तव्य तथा धर्म नै हो । ईश्वर ले हजार को सेवा गर्ने मलाई यी दुखी अवसर बकिथे को हो । हजार को आनन्द निमित्त एक आफ्नु यी प्राण पर्यन्त बिसर्जन गर्ने प्रयुक्त छ भने यी तृष्क जरा भार वीर के गान्धी ? म प्रसन्नता पूर्वक हजार को इहावस्था खिन तैयार छ ।

TRANSLATION FROM SINHALESE INTO ENGLISH

Paper-setter—REV. P. SEELANANDA

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Translate into English :—

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(a) රත්නෙන්ඩියෙන් වතුර ගෙන අයේපිවූ සිවු තෙමේ බුදුන්ගේ ශ්‍රී ගසනයන්හි පැත් වත්කරමින් මෙසේද කියේ වෙයි. මම මෙකී ජේතවන විහාරය බුදුන් ප්‍රධාන භික්ෂූන්ට දෙමි. මෙම වැඩසිටින බුදුන් ප්‍රමුඛ සංඝයාට හා මිත් පසුව පැමිණෙන සංඝයාටද සමසේම දෙමි. ඇත්තෙන්ම මෙය. ගරු කවිසුතු දිමනාවකි. බුදුරජ තෙමේද එහිවටිනා කම අඟවත් නාක්මෙන් ඒ ලක්ෂණ ජේතවනාරාමයේම බොහෝ වාරයක් වස්විසීමෙන් ජීවිත කාලයේ වැඩිකාලයක් එහිම ගතකළ සේක.

(b) ඉඤ්ජියාවෙහි වණි කාලය අපේ මෙහි බටහිර (සුරෝපයෙහි) දෙශගුණයට වඩා බොහෝ වෙනස්ය. ඉඤ්ජියාවෙහි සතු ගුණයද බොහෝසෙයින් පිළිවෙලට පැමිණේ. එයද අපේ මෙහි එංගලන්තයේ ඇතිවන සමාන දෙශගුණයට වඩා බොහෝ වෙනස්ය.

බොහෝ කලක් පැවති වෙනස්වනසුරු නොවූ
ප්‍රියකරු සතුටගේ ඇවෑමෙන් වහිනාලය පැමිණේ.
එයද තෙමසක් පිළිවෙළින් පවතී.

(c) මේ කාලයේ මෙබන්දක් සිදුවිය. එනම් ලද
රු අපාසත් කුමරහුගේ අතේ ඇඟිල්ලක පොලක්
පායේවෙයි. මේ නිසා ගෙනෙමේ (ලදරු අපාසත්
කුමරනෙමේ) කෑගසමින් පිය රජුකරා පැමිණියේ
වෙයි. මැණිවූ "වසසාවි" දෙවියද ලදරුවාගේ අසනි
පයට ඇඬුවේ ඔහු සමනම රජුවෙත පැමිණියේය. රජ
නෙමේ ඔහු දෙයනින් ගෙන සිඹ සැනසූයේය. අහෝ!
නොප පියාණෝ නොපට මෙසේ යොනගසන් සැල
කෑයේය.

TRANSLATION FROM ORIYA INTO ENGLISH

Paper-setter :—Mr. MAHESWAR DAS, M.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Translate into English any two of the following passages :—

(a) ମନ୍ତ୍ରୀମାନଙ୍କର ମନ୍ତ୍ରଣାନୁସାରେ ହୁଲକାର ସହିତ ସଜ୍ଜା କରିବାର ସିଦ୍ଧାନ୍ତ ହେଲା । ନାନାବିଧ ଉପାଦେୟ ଉପହାର ସହିତ ଜାନଙ୍କାରୁପ ସର୍ବତ୍ର ଉତ୍ତରଣ ସଜ୍ଜା କରାଯାଇ ସକାଶେ ହୁଲକାରଙ୍କ ନିକଟକୁ ପ୍ରେରିତ ହେଲେ । ରେଣିର ବାଞ୍ଛିତ ବୈଦ୍ୟର ବ୍ୟବସ୍ଥା । ହୁଲକାରଙ୍କ ତାହା ଇଚ୍ଛା, ବିନା ଯୁକ୍ତ ବିନା ରକ୍ଷାପାତ ବିନା ପରିଶ୍ରମରେ ଯେତେ ଅର୍ଥ ଲାଭ ହେଲା, ଏଥିରେ କି ସୁଖକର କଥା ଆଉ କଣ ଅଛି ? ରାଜମହଲ ନିକଟରେ ନବାବ ଏବଂ ହୁଲକାରଙ୍କ ମଧ୍ୟରେ ଭେଟ ହେଲା । ନବାବ ସାହେବ କେତେକ ଉପହାରଦ୍ରବ୍ୟ ଉପହାରଦେଇ ମଧୁର ବାକ୍ୟରେ ତାହାଙ୍କୁ ସାନ୍ତ୍ବନା କରିବାକୁ ଲାଗିଲେ । ମାତ୍ର ହୁଲକାର କେବଳ କଥାରେ ଭୁଲିବାର ଲୋକ ନୁହନ୍ତି, ତାଙ୍କର ଲକ୍ଷ୍ୟ ଅର୍ଥପ୍ରତି । ଏଣେ ତାଙ୍କ ବାସନା ପୂର୍ଣ୍ଣ କରିବା ନିମନ୍ତେ ନବାବ ଅକ୍ଷମ ।

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(b) ନବାବଙ୍କ ଭବନର ଲୟରୁ ନାହିଁ । ଅଭାବ ହେଲେ ସର୍ବତ୍ର ଅଭାବ । ଗନ୍ତାଘରେ ଅର୍ଥାଭାବ । ପ୍ରଜାକାଠାରୁ ଖଜଣା ଅସୁଲ ହେବାର ସମ୍ଭାବନା ନାହିଁ । ମୂଳରେ ମାନବାଭାବ, ଖଜଣା ଦେବ କିଏ ? ଯେଉଁ ପ୍ରଜାମାନେ ନିଜାନ୍ତ ମାୟା ନ ଛାଡ଼ି ପୈତୃକରାଜ୍ୟରେ ପଡ଼ି ରହି ଅଛନ୍ତି, ସେମାନେ ସର୍ବସ୍ଥାନ୍ତ ଦେଶର କୃଷିଯୋଗ୍ୟ ଭୂମି ପରିଚାଳନା ପ୍ରତିକ୍ଷାଧୀନ ନ ହେଲେ ଭବିଷ୍ୟତରେ ମଧ୍ୟ, ଅର୍ଥାଗମର ଉପାୟ ନାହିଁ । ଜଗତଶେଠ ଠାରୁ ଧାର କର୍କ କରି ଅଭାବ ମୋଚନ କରନ୍ତେ ମିରହକିବ ସେ ମାର୍ଗରେ କଷ୍ଟକପାତ କରି ଯାଇ ଅଛି । ନବାବ ଆଲବର୍ଦ୍ଦି ଶା ପ୍ରଗଣ ଏବଂ ଧୈର୍ଯ୍ୟଶାଳୀ ଲୋକ । ଏହି ବିପଦସଙ୍କୁଳ ସମୟରେ ବିଚଳିତ ହେଲେ ନାହିଁ । ଦକ୍ଷ ବାଦସାହସ୍ୟ ଠାରୁ ଅର୍ଜି କଲେ—“ପ୍ରଭୋ !

ବର୍ଗିବର୍ଗ ସୁଦ୍ଧା ମଧ୍ୟରେ ଉତ୍ପାତ ଲଗାଇ ଅଛନ୍ତି । ରାଜ୍ୟ ଅବଶ୍ୟମୟ, ଅପଣଙ୍କ ରାଜସ୍ୱ କପର ଆଦାୟ କରବ ?”

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(୦) ଆମ୍ଭମାନଙ୍କର ଆଦିପିତା ପ୍ରଥମଦବସ ସୂର୍ଯ୍ୟୋଦୟ ଦେଖି ଭାଲିଥିବେ ଏହି ଘାତ୍ରମୟ ପଦାର୍ଥ ସବଦା ଗଗନମଣ୍ଡଳରେ ବିରାଜିତ ଥିବ ; ପୃଥିବୀ ଏହିପରି ଆଲୋକିତ ହୋଇ ରହିଥିବ ମାତ୍ର ସାମ୍ବାଦ ସମୟରେ ସେ ସୂର୍ଯ୍ୟୋଦୟ ଦେଖି ଅବଶ୍ୟ ଚମତ୍କୃତ ଭାବ ହୋଇ ପଡ଼ିଥିବେ । ଅଧିକନ୍ତୁ ରଜନୀରେ ଅନ୍ଧକାର ସମାଗମ ଦେଖି ମନରେ ଭାଲିଥିବେ ପୃଥିବୀ ଚରକାଳ ଅନ୍ଧକାର-ବ୍ୟାପ୍ତ ହୋଇ ରହିବ । ଯେଉଁ ସୂର୍ଯ୍ୟ ଅସ୍ତ ଗଲେ ତାଙ୍କର ଆଉ ଉଦୟ ହେବ ନାହିଁ । ସେହିପରି ଆମ୍ଭେମାନେ ସୁଖସମୟରେ ଏପରି ଉନ୍ମତ୍ତ ହୋଇ ପଡ଼ୁଁ ଯେ ଅତ୍ୟଧର ଯେ ଦୁଃଖ ଆସୁଅଛି ମନ ମଧ୍ୟରେ ସ୍ଥଳ ଦେବାକୁ ଅବସରର ଅଭାବ ହୁଏ । ଦୁଃଖ ସମୟରେ ମଧ୍ୟ ସେହିପରି ନୈରାଶ୍ୟ ଆସି ଆମ୍ଭମାନଙ୍କ ହୃଦୟକୁ ଆକ୍ରନ୍ତ କର ରଖେ ।

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TRANSLATION FROM MALAYALAM INTO ENGLISH

Paper-setter—RAO BAHADUR L. K. ANANTAKRISHNA IYER, B.A. L. T.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Translate any two of the Malayalam passages into English :—

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(a) സിംഹം മൃഗങ്ങളുടെ രാജവാകുന്നു. അതിനോടും ശൌയ്യവും ശക്തിയും ധൈര്യവും ഇതര ജന്തുക്കൾക്കില്ല. കോലയാനപോലും സിംഹഗർജ്ജനം കേട്ടാൽ നടുങ്ങും. വിശാലമായ മുഖവും ജ്വലിക്കുന്ന നേത്രങ്ങളും കേസരം നിറഞ്ഞ ഗളവും ബലിഷ്ഠങ്ങളായ കര ചരണങ്ങളും ഉള്ള മൃഗരാജവിന്റെ ആകാരം ഭയങ്കരമാകുന്നു. ദേഹത്തിന്നു മൂന്നു നാലു അടി ഉയരവും വാലുൾപ്പടെ പത്തു പന്ത്രണ്ടടി നീളവും കാണം.

(b) പണ്ട് ആയുർവത്തത്തിൽ നിഷ്കഡം എന്ന രാജ്യം ഉണ്ടായിരുന്നു. അവിടെ നട്ടൻ രാജാവായിരുന്നു. നാലു വേദത്തിലും അർത്ഥശാസ്ത്രത്തിലും അദ്ദേഹത്തെപ്പോലെ സാമന്ത്രിയും ആർക്കും ഉണ്ടായിരുന്നില്ല. ആസൂത്രനായ യുവരാജാവിന്റെ യശസ്സ് നാലു ദിക്കുകളിലും പ്യാപിച്ചിരുന്നു. അദ്ദേഹത്തിന്നു ഭായുപദം ലഭിച്ചാൻ അനേകം രാജകന്യകമാർ ആഗ്രഹിച്ചിരുന്നു.

(c) ചുരുങ്ങിയായാലേ ചിത്രമെഴുതാൻ പാടുള്ളി എന്നൊരു പഴഞ്ചൊല്ലുണ്ട്. സ്വധർമ്മം ജീവിച്ചിരിക്കുമ്പോൾ സാധിക്കേണ്ടതെല്ലാം മേൽക്കൽ ആരോഗ്യം വേണ്ടതാകുന്നു. ഇതിന്നു ഒന്നാമതെ ആഹാരത്തെ പററി ചിന്തിക്കേണ്ടതാകുന്നു. അഹിതമായും അമിതമായും ഉള്ള ഭക്ഷണം ആരോഗ്യത്തെ ക്ഷയിപ്പിക്കും. അധികം പഴുത്തതൊ പഴുക്കാത്തതൊ ആയ ഫലങ്ങളും ഭക്ഷിക്കുന്നത നന്നല്ല. അതിഭക്ഷണം കൊണ്ടു പലരോഗങ്ങളും ഉണ്ടാകും.

TRANSLATION FROM GUJARATI INTO ENGLISH

Paper-setter : Dr. I. J. S. TARAPOREWALA, B.A., PH.D.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Translate into English two of the following passages :

(a) ત્રીકમ લોકોના કહેવા પ્રમાણે બીચારો બલો માણસ હતો. ચાર વાર મેટ્રીકમાં નાપાસ થઈ, બાપા મરી ગયા એટલે તેણે વિધવામાં અને બે નાના બાઈઓના ભાર પોતાના માથે ઉપાડ્યો હતો. શરાફીની દુકાને તે વ્યાજવરાનો ધંધો કરતો. સાંજે વાળુ કરવા ઘેર આવતો અને પાછો ફરવાનીકળી પડતો તે રાત્રે અગીઆરેક વાગે-ધરમાં આવવા તે નવરો થતો. પણ એના ગળ પ્રમાણે એ બે પૈસા ઠીક કમાતો, અને માત્ર અહદશા નળળી હોવાથી, તે નો સંસાર ચાલતો ન હતો; એટલી વાતની ખામી બે ન હોત તો પાંચ દહાડે સુખી માણસમાં તેની ગણતરી થાય એની હતી. 20

(b) કેળાં ઉત્તમ કુળોમાંનું એક છે, સાધારણ ઉંચા કદની, નીચેથી પહોળાં પણ ઉપર જતાં સાંકડાં થતાં સુંવાળાં લીસાં થડવાળી, તેમજ છેક ટાચ પર ધણાંજ મોટાં લાંબાં પહોળાં પાંદડાં તથાએકાદ બાજુએ મોટી કેળાંની લટકતી લૂમવાળી મનો હર કંઈ સૌ કોઈએ જોઈ છે, ને ભતભતનાં કેળાં પણ ખાધાં હશે. શુભ પ્રસંગે કેળના થાંભલા અને તોરણો ખાંધવાનો રીવાજ ધણા જૂના વખતથી ચાલતો આવ્યો છે. તે બતાવે છે કે હિંદુ-રચાનમાં કેળનું વાવેતર ધણા જૂના વખતથી થાય છે. જૂદી જૂદી ભતની જમીત તથા હવા માનમાં તેનું વાવેતર થઈ હોવાથી તેની ભતો ધણી છે, અને તેનું વર્ગી કરણુ કરવું મુશ્કેલ છે. 20

(c) થોડાં વર્ષો પર એક જુવાન સાધુ એ નદીને તીરે વસતો હતો. ખીલ સાધુ એની માફક તે ઉધાડો પડી નહોતો રહેતો. પણ એક ખેતર લઈ, તેમાં તેણે એક નાની સરખી ઈંટ મટોડાંની ઝું પડી બનાવી હતી. તેમાં તે રહેતો. તેણે પોતાના ખેતરની આસપાસ વાડ ભરી લીધી હતી. અને નદી કીનારે રનાન કરવા જવા સીવાય તે તેની બહાર જાયતો નહિ અને કોઈની મજરે તે ભાગ્યેજ પડતો. તે કોઈ સાથે વાત કરતો નહિ કે કોઈની પાસે કે માગતો નહિ. લોકો એને માટે કે ભેટ લાવતા તો તે આંગણમાં મુકી જતા. તેથી લોકોમાં એની પાસે કંઈ ચમત્કાર છે એવી માન્યતા ફેલાઈ ગઈ હતી.

TRANSLATION FROM TELUGU INTO ENGLISH

Paper-setter : Dr. B. RAMCHANDRA RAU, M.A., PH.D.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Translate any two of the following passages into idiomatic English :

(a) నేటితో మేవాడ భూమికిని నాకును బుణము తీరినది. ఈ బుణమునుండియు మేవాడ రాజ్యము నాకు శత్రుభూమి. నా పరాక్రమ ముతానన జ్వాలల భస్మీభూతము కావలసియున్న శాత్రువారణ్యము! నాపౌరుష జ్యోతికి కళంక మాపాదించిన నిష్ఠు రాత్తుండు ప్రతాపుడు నాకింక సహూదరుడు కాడు! సంకోచ లేకము లేక, సాటిరాజ పుత్రుడనయిన నన్ను పరాభవించిన యా దురహంకార మదోన్మత్తుడు నాకింక నా గర్భ శాత్రువుడు. ఇప్పట్టున నా కర్త వ్యమేమి? ప్రతిహింస! కళి! విధ్వంసము! ప్రతీకారమే యింక నా జీవన పరమావధి! మేవాడ నుండి నేను వెడలి పోవలెనుగా? నేను లేని మేవాడ యరనిముషము నిలువ నేరదని యెఱుగడు! మేవాడ రాజ్యమునకు పద్రవ కారినగు ధూమ కేతువుననిన న్నెఱుగడు! మేవాడ ప్రజాకోటి రిక్తి ధారల గ్రోల నున్న విశాచం బునని నన్నె ఱుగడు! మేవాడ

భూమిని చేత నా చేతన సమస్త వస్తు సమేతముగ భస్మీ భూతము చేయనున్న ప్రళయాగ్ని నని నన్నె టుగడు! మేవాడనుండి నేను వెడలి పోవలయునుగా? మంచిది. అట్లనే చేసెదను.

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(b) లేదమ్మా! నేనిప్పుడే పోవుచున్నాను. మీకు తెలియదు కాని, నాకంతయు దెలియు చున్నది. నేనుపోవుటకు బూర్వము రెండు మాటలు చెప్ప వలసి యున్నది. శ్రద్ధగా వినుము. నాయనగారి శరీరము స్వస్థతగానుండుటలేదు. ఈ నిరర్థక యుద్ధమున కాతవి నేల బురికొల్పెదవు? తంద్రీ! మీరేల వ్యర్థముగ యుద్ధ మొనర్చెదరు. మానుష ప్రయత్న మెంత వఱకు సాధ్యమో యంత వఱకును మీరు నెర వేర్చితిరి! అశ్వరు రాక్షస భావమున జిత్తుర్ తీసి కొనిన దీసి కొననిండు. వృథార్థక పాతము వలన ప్రయోజన మేమి? నాయనా కష్టముల నింక సహింప జాలరు. సర్వమును త్యజింపుడు. తుదకీ భోగమంతయు నెంత కాలము. మంచిది. అమ్మా! నాయనా! నాకింక శైలవిండు. నేను పోవుచున్నాను. నాస్థానమున ఈ మెహరున్నీ సాను జూచు కొనుడు — మెహర్! ఎట్టి శుభసమయమున నీవు వచ్చితివి. నిన్ను గన్నులార జూడకుండ నేను సంతోషముగ నెట్లు పోయి యుందును. మెహర్! మన యిర్వురకును నిరుపమానమగు మైత్రి కలిగినవి. ఇదిపూర్వ కర్మ పరిపాకము సుమా! కాని, మన తండ్రులకు మాత్రమట్టి సఖ్యమింకను చేకూరలేదు. నీ శక్తానుసారము ప్రయత్నించి వారలకు సహితము మైత్రిచే కూర్చుము. ఇవియే నీకు నాయంతిమ ప్రార్థనము.

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(c) సహూదరా! నేను కేవల మా మహేశ్వరుని యవతార మనియే భావించుచుంటిని! నీ యాజ్ఞ నాకనుల్లంఘనీయము! కాని నా జీవన జ్యోతియగు చౌలత్ విషయమున నా హృదయము నీ యాజ్ఞను సహితమతి క్రమించుచున్నది. నేనామెను మనః పూర్వకముగ వివాహమాడితిని! మాబాంధవ్యము పూర్వ పుణ్య పరిపాకమని నా దృఢ నిశ్చయము! ఎన్ని జన్మములనైన మాయీర్వుర నిట్లే కూర్చుచుండుమని సర్వదా నేను సర్వేశ్వరుని బ్రార్థించుచుందును! ప్రతాప్! నిస్సంశయముగ నీవు నా పాలిటి భాగ్య దేవతవు కాని, చౌలత్ నాకు మార్గ దర్శియగు దివ్య జ్యోతి! ఏ విధముగ పొరగ్రమ్మి యున్న నా పాపిష్టనేత్రములను విప్పి నీవు పురుష మహత్వమును భోధించితివో, యా విధముగ నే యామె నా క్లండను తెరచి స్త్రీజాతి యొక్క మహత్వమును నాకు బ్రకటిం చినది! స్త్రీలు తుచ్ఛులనియు, అసార జీవనులనియు నేనింత దనుక భావించి యుంటిని. కాని, చౌలత్ నాకు స్త్రీసౌందర్యమును జూపినది. అహా! ఆ సౌందర్య మెంత యద్భుతము! ఎంత ప్రతి భాపూరితము నేటి ప్రాతఃకాలమున నామె మనోహర విగ్రహము నా కన్నుల యెదుట నిలచి ప్రేమ సామ్రాజ్యమును దర్శించు చున్న సమయమున నామె ముఖ బింబము వైసెట్టి దివ్య తేజము తాండవించినది. అహా ఆ నవ మోహన విగ్రహమిప్పు డెచ్చట నున్నది? ఏమైనది.

TRANSLATION FROM PERSIAN INTO ENGLISH

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Translate into English any two of the following :

20 (a) کلمبس در حدود سنه ۱۴۴۷ در ژنه که بندری از ایتالیا میباشد متولد گردید - - برادر و یک همشیره داشت که همه از وی کوچکتر بودند - از زمان طفولیت مشارالیه به خواندن و نوشتن و نقشه کشیدن پرداخت و بدین وسیله قوت لایموتی بدست می آورد تا از ذلت تکدی و سؤال و مسکننت ببرد - بعد از چند مدت بشهر پاریس رفت که در آنجا بتحصیل علوم و تکمیل فنون به پردازش شروع کرد که هرچه در آن وقت از بابت زمین و دریا و استعمال نقشجات و اعداد در میان مردم رایج بود بیاموزد و در همان وقت نیز برصدشناسی پرداخت و اطلاعات زیاد از بابت اجرام سماوی تحصیل نمود - ولی غایت آمال و منتهای آرزویش همین بود که بدریا رود و بحرپیمائی را پیشه خویش سازد *

20 (b) چون ناصرالدین شاه بقتل رسید میرزا علی اصغر خاں امین السلطان پای تخت را با کمال نظم نگه داری نمود تا آنکه مظفرالدین شاه طهران وارد کردید و مراسم تاج گذاری بعمل آورد - در ابتدای جلوس مظفرالدین بتخت شاهزاده محمد علی میرزا که پسر ارشد بود بولایت عهد معین کرد - مظفرالدین شاه بادشاهی نیک فطرت و رحیم دل بود و از ابتدای جلوس خود رعایا را وعده و نوید بدل و داد میداد و نسیم آزادی

در ملک وزیدن گوفت مدارس و مکتب عدیده احداث گردید و زبان و قلم قدری آزاد شد و بواسطه چند جریده مخصوص افکار و خیالات مردم وسعت یافت و مردم را از خواب غفلت بیدار نمود و فهمانید که ترقی و تمدن هر قوم بسته بعلم است *

20 (c) جنب این ده یکصدسته کولی اقامت داشتند و رستم بیگ ساغر ملازمین را مطلع کرد که خبزدار باشید و قتیکه آنها دمبک زده جهت فروش دسته چپق مبادرند از شما چیزی ندرزند - این طائفه از اولاد دوازند هزار جمعیت مطرب و شعیده باز هستند که بهرام گوراز هند آنها را برای تفرج ایرانیها آورد - و تیز تا امروز آنها مطرب های عمومی در بعضی نقاط ایران هستند - اگرچه من شنیده ام در شیراز یهودیها هم باین کسب پست مشغول میباشند - خلاصه آن کویلهای آهنگر خوب و در خون گرفتن خیلی مادر اند - ما ایرانیها میدانیم تا قتیکه در یار حجامت نکنیم و خون خود را صاف نه تمائیم در تابستان سلامت نخواهیم بود باین ملاحظه خدمت آنها جهت ایس مسئله لازم میشود *

TRANSLATION FROM ARMENIAN INTO ENGLISH

Paper-setter : Mr. M. J. SETH, M.B.A.S.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Translate into English *two* out of the following three passages :

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(a) Լրթական այս հաստատութիւնը, որ շնորհահերթ հիմնել էին իւրեանց ազգային դէմքը անգլո-հայկական այդ միջավայրում պահպանելու համար, ամենից շատ ուշադրութիւն դարձնում էր Հայերէնի վրայ, և մենք տեսնում ենք նրա մէջ Հայոց լեզուի երեք ուսուցիչ, այնուհետեւ գալիս էր անգլիներէնը, երկու ուսուցչով: Ի՛նչու-նդու էր և տեղական լեզուն, Ի՛նչպէս լեզուներ, որ ունէր մի ուսուցիչ: Սնայած իր համեստ գիրքին և աննպաստ շրջապատին, "Ս"արդասիրական ճեմարանը" շատ երախտիք ունէր շնորհաստանի և մասնաւորապէս 'Լոր-Պուղայի Հայերի վրայ, քանի որ պատրաստել է շատ Հայագետ աշակերտներ, որոնցից ոմանք նոյն իսկ արդիւնաւոր են հանդիսացել գրականութեան մէջ: Շ'եմարանը աշակերտներ գրաւում էր մասնաւորապէս 'Լոր-Պուղայից և այն-չնորհեւ այն հանգամանքի, որ բարեկարգ և արդիւնաշատ դպրոցի հոգակ էր ստացել նաև հեռաւոր վայրերում:

(b) Լսուպէս էր այդ դպրոցական հաստատութիւնը, ուր ուսուցչի պաշտօնով մտնում էր և (Ռ)աղիադեանը, հայերէնագիտութեան մէջ նոյնպէս լաւ պատրաստուած մի ղոժ, որ, անշուշտ, աւելի ևս պիտի բարձրացներ դպրոցի հայկաբանական համբաւը: Բայց (Ռ)աղիադեանին չէր վիճակուած երկար մնալու իւր այդ պաշտօնի մէջ: Լարեյաջող դէպքից սփռու քաղելով, նա թողնում է ուսուցչութիւնը, որպէս զի նորից աշակերտ դառնայ և լրացնէ այդպիսով իւր վաղեմի բաղձանքը գիտութիւն ստանալու, լուսաւոր մարդկութեան հաղորդակից դառնալու բաղձանքը:

(c) (Ռ)աղիադեանը “Սարգսիբական ճ’եմարանի” վարչութեան թուղթ էր գրել, որ իւր ռոճիկն աւելացնեն, բայց պատասխան չէր ստանում: Ս’իայն այն ժամանակ, երբ յայտնի դարձաւ ամենքին, թէ նա ընդունուած է “Եպիսկոպոսական ճեմարանում,” հոգաբարձուները ժողով արին և աւելացրին նորա ռոճիկը, որպէս զի այդպէս պահեն նրան ուսուցչական պաշտօնի մէջ: Սակայն գրում է (Ռ)աղիադեանը “ի՛նչ, որ փափագելի էին գանձք իմաստութեան, ի բաց թողեալ պայն, զհետ պնդեցայ այնմ, զոր սիրեաց անձն իմ: Այլայց և ոչ թողից զնա մինչև ածից ի տուն մօր իմոյ ի Սուրբ Լսմիածին:” Լարձր Եւրոպական ուսում ստանալ և տանել այն ամեն պէս շայոց մտաւոր կենտրոն է զմեածինայս և ահա հայութեան ծոցից դուրս եկած առաջին հայրենասէր որոնողի բաղձանքը: Ս’իկնայն վառ ցանկութիւնը նոյն այդ միջոցին նոտած էր և մի ուրիշ մեծ որոնողի, Խաչատուր Լճովեանի սրտում:

PART B

ESSAYS, GRAMMAR, AND COMPOSITION

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Write an essay on *either* of the following subjects :— 15

(a) *Anger* : An almost universal failing of mankind—condemned by every religious teacher—not a sign of a manly or an independent nature—results of giving way to it—desirable under certain special circumstances—examples—ways of checking it.

(b) *Health* : Its importance—some factors for keeping good health, e.g. early rising, regular and moderate exercise, cleanliness, simple and wholesome food, temperance—body and mind both must be healthy—neglect bad for individuals and country—reasons for our poor health, and remedies.

2. *Either*, (a) Write an essay on the following subject :— 15

'There is no place like home.'

Or, (b) Tell the story from the outline given below, *using your own words* and expanding the facts according to your own fancy :—

'A defeated prince hides in cave within wood. Spider weaves web across opening. Next morning two pursuers pass mouth of cave. Perhaps inside cave? No : see spider's broad web. Pass on. Prince comes out and escapes to his friends.'

3. (a) *Either*, Compose sentences *beginning with any FOUR* of the following phrases :—(i) in spite of ; (ii) on the one hand ; (iii) early last summer ; (iv) it was the custom ; (v) in the neighbourhood ; (vi) scarcely was dinner over. 6

Or, Frame questions to which any *four* of the following sentences might be answers :—

- (i) You must not go until you have finished your work.
- (ii) I think you can do the work if you try very hard.
- (iii) I met two tramps and a shepherd.
- (iv) I came to see you.
- (v) Yes, thank you, I shall be delighted.
- (vi) I am afraid I cannot comply with your request.

- (b) Fill up the gaps in any *six* of the following :— 6

- (i) He lapsed — indifference.
- (ii) Fortune has lavished gifts — him.
- (iii) My refusal may involve me — ruin.
- (iv) Admission is restricted — ladies.
- (v) His conduct leaves a stain — his character.
- (vi) Ruin stared him — the face.
- (vii) Don't stare — a person.
- (viii) Ambition gives stimulus — industry.

(c) Combine the following simple sentences into one compound sentence :
The gardener planted some mango-trees. He came from the next village. He also planted some apple-trees. He was old. He planted all in the side border. This was in my uncle's garden. 3

(d) Give the feminine forms of the following words :—*testator, sultan, fox peacock.* 2

- (e) Mention *three* nouns which have no corresponding masculine forms. 3
4. Punctuate, using capital letters and dividing into paragraphs where necessary :—

the sun and the wind were one day disputing which was the stronger on seeing a traveller approaching cease your bawling said the sun to the wind and let us decide the question by doing and not talking whoever can succeed in taking away the travellers cloak shall be confessed to be the conqueror what do you say to deciding thus i agree cried the wind but would you mind my trying first not a bit said the other and straight away the wind set to work.

10

SECOND PAPER

Head Examiner—MR. HIRANKUMAR BANERJEE, M.A., B. LITT. (Oxon.)

- SRIMATI LATIKA BASU, B.A., B.LITT.
 „ MRINALINI BONNERJEE, M.A.
 „ ELA SEN, M.A.
 MR. ABDUL MANNAN, M.A., B.T.
 „ ALTAF HOSSAIN, M.A.
 „ JOSEPH ARULANANTHAM, B.A.
 „ BIPINBIHARI BANERJEE, B.A., B.T.
 „ BISHNUPADA BANERJEE, M.A., B.T.
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 „ NARENDRANATH BHATTACHARYYA, B.A.
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 „ MAHI MOHAN BOSE, M.A., B.A. (Oxon.)
 „ AMBIKACHARAN CHAKRABARTI, M.A.
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 „ RADHASUNDAR DAS, B.A.
 „ PRAPHULLAKUMAR DASGUPTA, M.A.
 „ DIGINDRACHANDRA DUTTA, M.A.
 „ SRISCHANDRA GANGULI, M.A.
 „ BHIMAPADA GHOSH, M.A.
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 „ ANANTAPRASAD GOSWAMI, M.A.
 „ JATINDRACHANDRA GUHA, M.A., B.T.
 „ DHIRENDRANATH KUNDU, M.A.
 „ JANARANJAN LAHIRI, M.A.
 „ HEMANTAKUMAR MAJUMDAR, B.A.
 „ SAURINDRANATH MAJUMDAR, M.A.
 KHAN BAHADUR MD. YUSUF, M.A.
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 „ AMULYADHAN MOOKERJEE, M.A.
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 „ NAGENDRACHANDRA MOOKERJEE, M.A.
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Examiners—

Examiners— (Contd.)	{	QUAZI AKRAM HOSSAIN, M.A.
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		„ PRAMATHANATH SARKAR, M.A.
		„ SUBODHCHANDRA SENGUPTA, M.A.
		„ JOGESCHANDRA SINHA, M.A.
		„ W. SUTHERLAND, M.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Explain with reference to the context : 18

(a) *Either*, Surely the Ugly Duckling, whom every one had despised, scolded, and worried, had at last turned into a swan.

Or, 'We are ducks who have reared a wild swan', she moaned, with tears in her eyes.

(b) *Either*, 'Crito, I owe a cock to Asclepius ; will you remember to pay the debt ?'

Or, 'I think', said he, 'that the third guards have a full muster now.'

Or, I resembled, upon my first entrance into the busy and insidious world, one of those gladiators who were exposed without armour in the amphitheatre at Rome.

(c) *Either*,

O fool ! thou knowest not the compact then
That with the three-formed goddess she has made,
To keep her from the loving lips of men,
And in no saffron gown to be arrayed.

Or,

Oh, which are they that come through sweetest light
Of all these homing birds ?
Which with the straightest and the swiftest flight ?
Your words to me, your words !

2. *Either*, 'In her own eyes her adventure in the Crimea was a mere stepping-stone in her career, but it was also a lever with which she intended to move the world.' Give an account of the activities of Florence Nightingale, after her return to England from the Crimea, which justify the above statement. 12

Or, Give a short account of the life and the last hours of Socrates ; and briefly state some of his teachings. 12

Or, 'His best monuments are his works and his life.' Show the justice of this remark from the life of the man about whom it is made. 12

3. *Either*, 12

'I gazed—and gazed—but little thought
What wealth the show to me had brought.'

Who is the speaker ? What was the 'wealth' which that 'show' had brought him, and of which he was not aware at the time ?

Or,

12

But none of all these things, or life, seemed good
Unto his heart, where still unsatisfied
A ravenous longing warred with fear and pride.

Of whom is all this said ? What was the 'ravenous longing' of his heart ? In what sense could this 'longing' be said to have 'warred with fear and pride' ?

4. Write notes on *four* of the following : Adonis' bane ; the Milky Way ; the dovecote doors of sleep ; Davy lamps ; Diana's raiment ; the Braille Alphabet ; the responses of the clerk ; the Eleven ; to be decreed an ovation. 8

5. Give in your own words the substance of *one* of the following passages :— 25

(a) Young people naturally seek the society of those of their own age ; but be careful in choosing your companions ; and lay this down as a rule never to be departed from, that no youth, nor man, ought to be called your friend, who is addicted to indecent talk or who is fond of low society. Either of these argues a depraved taste, and even a depraved heart ; an absence of all principle and trustworthiness ; and, I have remarked it all my life long, that young men, addicted to these vices, never succeed in the end, whatever advantages they may have, whether in fortune or in talent. Fond mothers and fathers are but too apt to be overlenient to such offenders ; and as long as youth lasts and fortune smiles, the punishment is deferred ; but it comes at last ; it is sure to come ; and the gay and dissolute youth is a dejected and miserable man.

(b) It is almost a definition of a gentleman to say he is one who never inflicts pain. The true gentleman carefully avoids whatever may cause a jar or a jolt in the minds of those with whom he is cast ;—all clashing of opinion, or collision of feeling, all suspicion, or gloom, or resentment ; his great concern being to make every one at their ease and at home. He never speaks of himself except when compelled, never defends himself by a mere retort ; he has no ears for slander or gossip, is scrupulous in imputing motives to those who interfere with him, and interprets everything for the best. He is never mean or little in his disputes, never takes unfair advantage, never mistakes personalities or sharp sayings for arguments. He has too much good sense to be affronted at insults, he is too well employed to remember injuries, and too indolent to bear malice. He is patient, forbearing, and resigned ; he submits to pain, because it is inevitable ; to bereavement, because it is irreparable ; and to death, because it is his destiny.

6. Tell in your own words the story contained in the following poem, and bring out its moral :— 25

About Ben Adhem.

About Ben Adhem (may his tribe increase)
Awoke one night from a deep dream of peace,
And saw— within the moonlight in his room,
Making it rich, and like a lily in bloom—
An angel, writing in a book of gold.
Exceeding peace had made Ben Adhem bold,
And to the presence in the room he said,
'What writest thou ?'—The vision raised its head,
And with a look made of all sweet accord,
Answered, 'The names of those who love the Lord.'
'And is mine one ?' said About. 'Nay, not so,
Replied the angel. About spoke more low,
But cheerily still ; and said, 'I pray thee, then,
Write me as one that loves his fellow men.'
The angel wrote, and vanished. The next night
It came again with a great wakening light,
And showed the names whom love of God had blest,
And lo ! Ben Adhem's name led all the rest.

MATHEMATICS

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Mr. NARES CHANDRA GHOSH, M.A.

COMPULSORY PAPER

Head Examiner—Mr. SATISCHANDRA GHOSH, M.A.

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Examiners— {

Examiners— (Contd.)	{	.. GUNASINDHU SARDAR, M.Sc.	
		.. BIBHUTIBHUSHAN SEN; M.Sc.	*
		.. ANANTAMOHAN SENGUPTA, M.A.	
		.. BASANTAKUMAR SENGUPTA, M.A.	
		.. LALITMOHAN SINHA, M.A., B.T.	

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Either, Find the least number of rupees that should be added to 149250 rupees to make the sum equally divisible among 4744 persons. 7

Or, Find the least number of five digits which has 53 for a factor. 7

2. Either, Simplify 7

$$\frac{1}{1 + \frac{1}{1 + \frac{3}{4 + \frac{5}{6\frac{2}{3}}}}} + \frac{2}{3} \div \frac{5}{8} \text{ of } \frac{2}{3} \times 1\frac{1}{2} - \frac{1}{17}(10 + \frac{2}{3}\frac{5}{8}).$$

Or, Simplify $\frac{15\cdot6 + 7 - 0\cdot3}{3 \times 7\cdot4 \times 0\cdot25} + \left\{ 37 + \frac{3\cdot7037}{100} \right\} \times 0\cdot27$

3. Either, Find the cost of 45 chests of tea, each 1 md. 17 srs. 9 ch., at Rs. 80 8 as. 8 ps. per md. 9

Or, (i) Find the G.C.M. of 80906 and 41814. 4

(ii) Find the least number which when diminished by 39 is exactly divisible by 32, 40, 48, 56, 64. 5

4. Either, If the principal and interest for 5 years together amount to Rs. 1100 and the interest is $\frac{3}{8}$ of the principal, find the principal and the rate of interest per cent. per annum.

Or, A can do a piece of work in 9 days and B in 18 days. They begin together but A goes away 3 days before the work is finished. How long does the work last? 7

5. Either, (i) Simplify

$$\frac{\frac{a}{a-b} - \frac{a}{a+b}}{\frac{b}{a-b} - \frac{b}{a+b}} \div \frac{\frac{a+b}{a-b} - \frac{b-a}{a+b}}{\frac{a+b}{a-b} - \frac{a-b}{a+b}}$$

- (ii) Find the H.C.F. of

$$x^4 + 2x^3 + 3x^2 + 11x + 10$$

and $x^5 + 2x^4 + 5x^3 - 3x - 5.$

Or, (i) Prove that $a^3 + b^3 + c^3 = 3abc$, when $a + b + c = 0.$

- (ii) Find the L.C.M. of

$$a^3 + 6a + 8, \quad a^3 + 5a + 6, \quad a^3 + 4a^2 + 4a + 3.$$

6. Either, (i) Factorize $x^4 + 4.$ 4

(ii) A number consists of two digits, the sum of the digits being 9 : if 9 be added to the number the digits are inverted. Find the number. 6

Or, (i) If $\frac{a}{b} = \frac{b}{c} = \frac{c}{d}$, prove that 4

$$\frac{a^3 + b^3 + c^3}{a^3 + b^3 + c^3 + d^3}.$$

- (ii) Find the time between 3 and 4 o'clock when the hour and minute hands of a clock are in the same straight line. 6

7. Draw the graphs of
 (i) $y=2x$ and (ii) $3x-2y+2=0$, 10
 and find the coordinates of their point of intersection.
8. Either, (i) If two sides of a triangle are unequal show that the greater side has the greater angle opposite to it. 7
 (ii) Show that the difference of any two sides of a triangle is less than the third side. 5
 Or, (i) Show that triangles on equal bases and of the same altitude are equal in area. 7
 (ii) Show that the straight line joining the middle points of two sides of a triangle is parallel to the third side. 5
9. (i) Show that the angle which an arc of a circle subtends at the centre is double that which it subtends at any point on the remaining part of the circumference. 9
 (ii) L is any point on the arc PM of a circle. The angles LPM and LMP are bisected by straight lines which intersect at O . Find the locus of the point O . 7
10. Either, (i) Draw a triangle equal in area to a given quadrilateral. 6
 (ii) Bisect a quadrilateral by a straight line drawn through an angular point. 6
 Or, (i) Construct a quadrilateral, given the lengths of the four sides and one angle. (Traces only are required.) 6
 (ii) Bisect a triangle by a straight line drawn through a given point in one of its sides. (Traces only are required.) 6

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Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. (i) *Either*, Find the value of 6

$$\sqrt{3} + \sqrt{2} \quad \sqrt{3} - \sqrt{2} \\ \sqrt{3} - \sqrt{2} \quad \sqrt{3} + \sqrt{2}$$

correct to three decimal places.

Or, A rectangular field of area 160 acres is twice as long as it is broad. Find the perimeter of the field to the nearest foot. [1 acre = 4,840 sq. yds.] 6

- (ii) Find the value of 5

$$1 + \frac{1}{1.2^2} + \frac{1}{1.2^2 \cdot 3^2} + \frac{1}{1.2^2 \cdot 3^2 \cdot 4^2}$$

correct to four decimal places.

2. (i) *Either*, If glass is 2.5 times as heavy as water, what is the weight in kilograms of a cubic metre of glass? [1 c.c. of water weighs 1 gram.] 5

Or, A tax of Rs. 1,750 is raised from three villages whose populations are in the proportion of 10, 9, 13. Find the tax paid by each village. 5

- (ii) A man sells a cow at $2\frac{1}{2}$ per cent. below cost price. Had he received Rs 6 more than he did, he would have made a profit of 5 per cent. What did the cow cost? 6

3. A circular track is 984 yds. in circumference. Two men start to run round in opposite directions from the same point; one runs at the rate of 10 miles an hour, and the other at $10\frac{1}{2}$ miles an hour. Find when and where they will meet (i) for the first time, (ii) for the second time. 8

4. *Either*, (i) If $\frac{x+1}{x-1} = 2$, find the value of $\frac{x^2-1}{x^2+1}$. 5

(ii) A certain number exceeds its reciprocal by 1. How many such numbers are there? Find them. 5

Or, Draw the graph of $5y = 2x^2$. Find by measurement the coordinates of the points in which the graph is cut by the straight line drawn through the points (2, 1) and (-3, 2). 10

5. (i) *Either*, Simplify 5

$$\frac{a^{\frac{3}{2}} + ab}{ab - b^2} - \frac{\sqrt{a}}{\sqrt{a} - b}$$

(i) Find the square root of

$$x^4 - 2x^2 + 3 - \frac{2}{x^2} + \frac{1}{x^4}$$

- (ii) If $\frac{x}{lm - n^2} = \frac{y}{mn - l^2} = \frac{z}{nl - m^2}$,

show that $lx + my + nz = 0$. 5

6. *Either*, (i) If the p th and the q th terms of an A.P. be respectively c and d , find the first term and the common difference. 5

(ii) In boring a well 200 ft. deep, the cost is Rs 1 2 as. for the first foot, and an additional anna for each subsequent foot. What is the cost of boring the well? 5

Or, (i) If the p th and the q th terms of a G.P. be c and d respectively, find the first term and the common ratio. 5

(ii) The sum of an infinite G.P. is 3, and the sum of its first two terms is $2\frac{3}{4}$; show that there are two such series. Find them. 5

7. *Either*, (i) If two chords of a circle intersect at a point inside the circle, then the rectangle contained by the segments of the one is equal to the rectangle contained by the segments of the other. 9

(ii) The tangents to two intersecting circles from any point on their common chord produced are equal. 5

Or, Prove that the orthocentre P , the circumcentre O , the centroid G , and the centre of the nine-point circle L of a triangle ABC are collinear. 14

8. (i) If a straight line cuts two sides of a triangle proportionally, it is parallel to the third side. 9

(ii) Find the locus of the centroids of triangles of a constant area standing on the same base. 5

9. *Either*, Draw a circle of diameter 3 in., and inscribe accurately a regular pentagon in it. Measure the length of a side of the pentagon. 12

Or, Construct a circle to touch two given intersecting straight lines, and pass through a given point. 12

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Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1 Translate into English any five of the following :— 25

(a) सम्प्रति वनमिदमपुष्पसत्त्वाधिष्ठितम्, अतोऽद्याकं त्याज्यम्, तथा च शुतस्रयाप्यपुष्पैः शब्दी मङ्गान् ? शब्दागुसारं च तस्य प्राणिनो बलेनापि सुमहता भवितव्यम् ।

(b) इत्याकर्ण्य खम्ब-खमन्तकोदन्तोऽन्तः प्रविष्टः कुमारक्रीडनक्रीकृतं धात्रीहस्ते तेजीभिर्जा-ज्वल्यमानं च खमन्तकं ददर्श । तमपुष्पं पुरुषमागतमवेक्ष्य धात्री—ब्राह्मि वाहीति व्यागहार ।

(c) अथ तौ धर्माधिकारवाधितपुरुषैर्दिव्याधं यावन्नियोगितौ, तावत् पापबुद्धिराह—अहो ! न सम्यग्दृष्टौ न्यायः, तदत्र विषये हृषदेवता मन साविभूता तिष्ठति ।

(d) एवं कृते हयोरप्यावयोर्विनाशो भविष्यति, तत् खल्यतामपराधः । अथैवं वदतोऽपि तस्य तेन विषकलं भवितुम्, किं बहुना ? हावपि विनष्टौ ।

(e) तत् शुक्ला वानरजातामर्षेराज्ञोचितम्—अहो ! निर्वातनीडगर्भावस्थिताः सुखिनः पक्षिणीऽद्यान् निन्दन्ति, तद् भवतु तावद् वृष्टेरुपशमः ।

(f) अथ ज्ञायता तज्जीवनाय तदृचवासिनः पचिषः स्वाहारात् किञ्चित् किञ्चिदुच्यते ददति, तेनासौ जीवति श्रावकरसाद्य करोति । अथ दीर्घकार्थः पचिशावकान् भक्षयितुं तन्नागतः ।

(g) राजा वदति—अथ रे वेताल ! चिरकालमुपार्जितं शरीरं त्यक्तव्यमिति चक्रन्, जीर्णशरीरं विहाय सर्वगुणाधारविजशरीरं प्राप्तव्यमिति मनसः ।

Derive त्याज्यम् and account for the case-ending in पञ्चाक्षम् in (a); expound the *samūhas* in दिव्यार्थे in (c) and सर्वगुणाधारविजशरीरं in (g); account for the case-endings in चावयोः and तस्य in (d); give the formation of the words क्रीडनक्रीडतम् in (b) and सुखिनः in (e). What will be the form if तत् and युत्वा in (e) are combined by the rule of *sandhi* ? 12

2. Explain in English with reference to the context *one only* from *each* of the following groups :— 12 + 5

GROUP A

(a) नान्धस्मिन् पुरुषे सन्ति ये सत्यवति वै गणाः ।

प्रदानमेव तन्नाम्ने रोचते दुहितुसाव ॥

(b) ततः काले बहुतिथे व्यतिक्रान्ते कदाचन ।

प्राप्तः स कालो मर्त्यस्य यत्र सत्यवता नृप ॥

GROUP B

(a) अदरिद्रां कुक्ष्यैतां प्रथिवीमखिलां सखि ।

स्वस्वाग्रसु ते प्रदत्तोऽसि लोकाय द्रविणार्थिने ॥

(b) नागा भवन्तु मे भक्ष्या इति सोऽपि हरिस्ततः ।

वेनतेयो वरं वने मातुर्दास्येन कीपितः ॥

GROUP C

(a) देवतानि च यान्धस्मिन् वने विविधपादये ।

नमस्करोम्यहं तेभ्यो भर्तुः शंसत मां हताम् ॥

(b) यदन्तरं सिद्धमगालयोर्वने

यदन्तरं स्यन्दनिकासमुद्रयोः ।

सुराग्र-सौविरकयोर्वदन्तरम्

तदन्तरं दाशरथेसावैव च ॥

Account for the case-endings in the underlined words above; derive बहुतिथे in (b) in Group A.

3. Narrate fully the story of वत्सराजेन लीजराजस्य प्राचरचक्षन् either in English or in Sanskrit. 6

4 (a) Decline either the bases निहम् (in masculine) in the locative (सप्तमी) and माह in the accusative (द्वितीया), or the bases हवहन् in the ablative (पञ्चमी) and वधू in the genitive (षष्ठी). 3

(b) Conjugate either the root दुह् in लङ् (third person) or the root धा in लोट् (second person). 1½

(c) Give the feminine forms of any three of the following :—गोप ; अश्व ; पाचक ; सेवक ; कर्तुं ; ताडय । 1½

(d) (i) तं कालं तं मुहूर्तं च प्रतिचक्षन् नृपालाज्ञा । 3

(ii) निवत्सते क्लेशमनं सुता तव ।

(iii) निवर्त्त-गच्छस्व न ते श्रमी भवेत् ।

Notice the grammatical irregularities in any three of the underlined words above.

5. Correct any three of the following sentences : 6

(a) रमणीयोऽयं प्रातः ।

(b) हववाटिकायाः पश्चिमस्यां दिशि महान् सरो वर्त्तते ।

(c) उद्याने क्रीडमानास्त्रयः कनका मयाद्य दृष्टाः ।

(d) सर्वे प्रजाः राजे करं ददन्ति ।

6. Translate into Sanskrit any five of the following :— 25

(a) When he heard this he was much delighted, and at once determined to set out for his native country.

(b) Next morning he got up before the sun rose and went with his brothers to walk in the garden.

(c) When she looked at this ring she was much surprised to find it was the same she gave away.

(d) During my residence in the country I used frequently to attend at the village school.

(e) I related her story to some members of her family and they were all moved by it.

(f) Money is said to be power, which is in some cases true, and the same may be said of knowledge.

(g) My father sent me to school when I was five years old, and I applied myself closely to my studies.

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Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. How did Sāvitrī overcome her father's objection to her marriage with Satyavat, and finally triumph over the fatal blow ?

2. Translate into English any *two* of the following :— $5 \times 2 = 10$

(a) ततः स मध्यं गतमंशुमन्
ज्योत्स्नावितान् मुहुर्बभूव
ददश भीमान् भुवि भानुमन्
गोष्ठे वृषं मत्तमिव भ्रमन्तम् ॥

(b) अहो वत नृशंसस्य पापमापतितं मनः ।
किं वा सुलभपापा हि भवन्त्युत्तमैरुचयः ॥

(c) अरावप्युन्नितं कार्यमप्रतिपद्यते गृहमागते ।
हेतुः पार्श्वगतां छायां नीपसंहरति द्रुमः ॥

3. Translate into English any *three* of the following :— $10 \times 3 = 30$

(a) अथासौ वणिकश्शिशुः स्नानीपकरणमादाय प्रवृष्टमना अभ्यागतेन सह प्रस्थितः ।
तथानुष्ठिते स वणिकः स्नात्वा तं शिशुं नदीगुहायां प्रक्षिप्य तद्वहारं वृष्टतप्रसारेण आच्छाद्य
सत्वरं गृहमागतः । पृष्टश्च तेन श्रेष्ठिना कथ्यतां कुत्र मे शिशुरिति स आह—नदीतटात् स
श्लेणेन हत इति ।

(b) अथ सिंहास्यस्य तद् दारुणं वचनमाकर्ण्य सकीपम् इदमाह—धिक् पापाधम !
यद्येवं भूयोऽपि वदसि तत् त्वां तत्क्षणेनैव वधिष्यामि, यतो मया तस्याभयं दत्तम्, तत् कथं तं
व्यापादयामि ? उक्तञ्च बुधैः सर्वप्रदानेषु अभयप्रदानं प्रधानमिति ।

(c) ततो राज्यलोभाकृष्टः स गृजः शृगालदर्शितवर्त्मना धावन् महापङ्के निमग्न आह्वितं
किमधुना विधेयम्, महापङ्के निपतितोऽहम्, पराहत्य पश्य । शृगालेन विहस्य उक्तम्—देव मम
पञ्चाशे वृक्षं दत्त्वा उत्तिष्ठ । यन्मदविधस्य वचसि त्वया विश्वासः कृतस्तस्य फलमेतत् ।

(d) विशाला महानगरीयं यत्र बहुवो रमणीया अत्युच्चं प्रासादाः, अगण्यानि वर्त्मनि
प्रशस्तानि, विचित्राचित्रशालाः पशुशालाः शिल्पशालाश्च विलसन्ति । प्रवहति चास्याः पश्चिमे दिग्भागे
पूतसलिला भागीरथी यस्यामगणिताः सुद्रा महान्तश्च पीताः सततं तरन्ति । पवित्रा चैवं पुरी
साधकवराणां अमुया कर्मवैराण्याश्च पादरजोभिः ।

4. (a) Dissolve the *sandhis* in three of the following :— 3

तरुच्छाया ; नीतिरेषा ; मातृरक्षा ; कश्चिन्नपि ; दुःखात्ता

(b) Give the feminine forms of three of the following :— 3

सुन्दर ; महाराज ; युवन् ; मत्स्य ; भवत् ।

(c) Compose sentences showing how degrees of comparison (comparative and superlative) are expressed in Sanskrit. 4

(d) Give the compounded forms of *three* of the following :—3

इन्द्रश्च अग्निश्च ; काव्याः दासः ; महान् ब्राह्मः यस्य सः ; दिनं दिनं प्रति ; पशूनां यामाणां समाहारः ।

5. (a) Conjugate *three* of the following :— 3

स्त्रा in विचित्रिङ् third person singular ; दा in लृट् third person plural ; कृ in लृङ् first person singular ; भृज् in लोट् second person singular ; कृ in लृट् first person plural. 3

(b) Decline *three* of the following :— 3

जरा in प्रथमा ; स्त्री in षष्ठी ; वाच् in समी ; अष्टद in द्वितीया ; श्रीपति in तृतीया ।

(c) Correct *three* of the following :— 6

(i) तं बालिकाम् अहं हवाम् आरीदुम् अपश्यम् ।

(ii) वक्ष्य मे वाचं श्रूयताम् ।

(iii) वक्तव्य राजा साधुभिः पूजितो भवति ।

(iv) महापुरुषेण कृते कः शत्रून् लिखति ।

(v) हिमालयात् प्रवहमाणा गङ्गा सागरं सङ्गच्छते ।

6. Translate into Sanskrit any *five* of the following :— $5 \times 5 = 25$

(a) Ahalyā was well pleased to see her subjects prosperous, and protected them in their possessions.

(b) Of these, the most famous in arms was the third son, though his brother, Bhīma, was also a warrior of renown.

(c) But Karna spoke no angry words in answer ; he only looked upward to the bright sun in the unclouded heaven.

(d) The ferryman exclaimed, "What a pretty stone ! Give it to me, and your donkey may go free."

(e) Away the stag fled in much consternation, and bounding nimbly over the plain, threw them behind him in no time.

(f) No one should ever join the company of wicked people, nor should any one tell a lie under any circumstance.

PĀLI

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COMPULSORY PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English any *two* of the following extracts, commenting fully upon the words italicized : 15

(a) Atha naṃ aparabhāge pitari kālakate mātā kuṭumbaṃ vicārentī āha : “tāta, tayā dullabhamanussattaṃ laddhaṃ, dānaṃ dehi, sīlam rakkha, uposathakammaṃ kara, *dhammaṃ* suṇāhi” ti. “Ammā, na mayhaṃ dānādīhi attho, mā maṃ kiñci avaca, ahaṃ yathākammaṃ gamissāmi” ti evaṃ vadantaṃ pi naṃ ekadivasaṃ pupphamuposathadivase mātā āha : “tāta, ajja abhikkhito *mahā-uposathadivaso*, ajja uposathaṃ samādiyitvā vihāraṃ gantvā sabbarattim dhammaṃ sutvā ehi, ahaṃ te sahaṃsaṃ dassāmi” ti.

(b) Ath’ ekadivasaṃ pañcasatā bhinnanāvā vāṇijā tāsaṃ nagarasamīpe uttarimsu. Tā tesāṃ santikaṃ gantvā palobhetvā yakkhanagaraṃ ānetvā paṭhamagahitamanusse devasaṃkhalikāya bandhitvā *kāraṇaghare* pakkhipitvā jeṭṭhayakkhiṇi jeṭṭhavāṇijaṃ sesā seso ti pañcasatā *yakkhiṇiyo* te pañcasate vāṇije attano sāmiko akāmsu. Atha sū jeṭṭhayakkhiṇi rattibhāge vāṇije niddaṃ gate utthāya gantvā *kāraṇaghare* manusse māretvā maṃsaṃ khādītva āgacchati. Sesāpi tath’ ova karonti.

(c) Rañño hanukaṭṭhikena daḷhaṃ katvā gahitasigāle aparāparaṃ saṃsarante paṃsu sithilo ahosi. Si pi sigālo maraṇabhayaabhito catūhi padehi rañño uparimabhāge paṃsum apabbūhi. Rājā, paṃsuno sithilabhāvaṃ ātvā sigālaṃ vissajjetvā nāgabalo thāmasampanno aparāparaṃ saṃcaranto ubho hatthe ukkhipitvā āvāṭamukhavatṭiyaṃ olubha vātaccchinnavalāhako viya nikkhamitvā *ṭhito amacce* assasetvā paṃsum viyūhitvā sabbo uddharitvā amaccaparivuto *āmakasasāne* atṭhāsi.

2. Summarize in English either of the following Jātaka-stories :—
(a) *Matakabhatta-jātaka*, (b) *Sīlānisamsa-jātaka*. 8

3. (a) Distinguish clearly between *Bārāṇasī* and *Kāśirāṭṭha* in the following extract from the *Dadhivāhana-jātaka* :— 4

Atīte *Bārāṇasiyaṃ* Brahmadatte rajjaṃ karente *Kāśirāṭṭhe* cattāro bhātaro brāhmaṇā isipabbajjaṃ pabbajjtvā, &c.

(b) Write notes on any *four* of the following :—*disikkāka*, *suṇisumāra*, *Sirāsavatthu*, *Kassapa*, *Sāriputta*, and *Bharurāṭṭha*. 4

4. Translate into English any *two* of the following stanzas, adding notes on the words italicized :— 10

(a) *Paḍesarajjaṃ* issariyaṃ cakkavattisukhaṃ piyaṃ |
Devārajjaṃ pi dībhesu sabbam etena labbhati ||

- (b) Eso nidhi sunihito ajeyyo anugāmiko |
Pahāya gamanīyesu etaṃ ādāya gacchati ||
- (c) Handa, Buddhakare dhamme vicināmi ito e' ito |
Uddham adho dasadisā yāvata dhammadhātuyā ||
5. Either, Give a short account of Sumedha's life. 9
Or, Give the substance of the *Mettasutta*.
6. Make necessary corrections in the following :— 8
- (a) Kimattha etta nipanno si ?
(b) Luddako te ubhe pi brāhmaṇaṃ adāsi.
(c) Tīppaṃ janesu kaṃ icchesi ?
(d) Tāva yeva ākāsi ratanaṃ patiṃsu.
(e) Ahaṃ sappāṃ ativiyaṃ bhāyāmi.
7. (a) Join, according to the rules of *sandhi*, the following :—*tasma-īha*,
sabbhi-eva, *tathā-upamaṃ*, and *sah-rāgo*. 2
(b) Disjoin the *sandhis* in the following :—*panime*, *nopeṭi*, *anveti*, and
bojjhaṅgā. 2
(c) Decline fully the base of EITHER *yāyu* OR *aggi*. 3
(d) Conjugate the roots of EITHER *paḥāya* OR *akaṃsu* in the future
tense. 2
(e) Name and expound the *saṃāsas* in the following :—*yathākammaṃ*,
thūmasaṃpanno, *hanukaḥḥikena*, and *dānādāhi*. 2
(f) Frame sentences to illustrate the use of the following :—*attho*,
mā nissāya, *ārabbha*, and *āldhā*. 6
8. Translate into Pāli any five of the following passages :— 5 × 5 = 25
- (a) Once upon a time, a tiger was caught in a trap.
(b) He tried in vain to get out through the bars.
(c) He rolled and roared with rage when he failed.
(d) By change a poor Brahman came by.
(e) "Let me out of this cage, O pious one," cried the tiger.
(f) "Nay, my friend" replied the Brahman, mildly. "you would
probably eat me if I did."
(g) "Not at all," swore the tiger with many oaths. "on the contrary,
I should be grateful for ever."

* ADDITIONAL PAPER

*Candidates are required to give their answers in their own
words as far as practicable.*

The figures in the margin indicate full marks.

1. Translate any two of the following extracts into English, adding short
explanatory notes :— 10
- (a) Akataññuṃ akattāraṃ katassa appatikāraṃ |
yasmim katanñutā n' atthi niratthā tassa sevā ||
Yassa sammukha-cinṇena mittadhammo na labbhati |
anusuyyaṃ anakkosaṃ sanikaṃ tamhā apakamme ||
- (b) Mā brāhmaṇa ittaradassanena viśāsam āpajji catuppādassa |
dalhappahāraṃ abhikaṃkhamāno avasakkati dassati supphāraṃ |
- (c) Na paro paraṃ nikubbetha nātimaññetha kaṭṭhaṇaṃ kiñci |
vyāroṣaṇā paṭigha-saññā naññamaññiassa dukkham iccheyya ||

2. Explain any *five* of the following words, suggesting the technical meaning of each :—*dohaḥa*, *tiṭṭhiyā*, *matakabhaṭṭa*, *sasa-lakkhaṇa*, *dharmagandhikā*, *ghanavassāpanaka-nakkhatta-yoga*, *niyāmakasippa*, *rājā-bhisecana*, *lokadhammā*, *nidhī*, *brahmavihāra*, *buddhabhijāṅkura*. 5

3. *Eiher*, What information can be gathered from the *Bāveru* and the *Suppāraka Jātaka* regarding the activities of Indian sea-going merchants ? 5

Or, Give the general characteristics of a *Jātaka* story, and name a typical *Jātaka* from your text.

4. (a) Parse *sanikaṇ* in extract 1 (a), *abhiṇikkhamāno* in extract 1 (b) and *kathaci* in extract 1 (c). 3

(b) Account for the grammatical form and use of *taṃhū* in extract 1 (a), *ūpaṇṇi* in extract 1 (b), and *iccheyya* in extract 1(c). 3

5. Supply words to fill up gaps in the following extract :— 4

Rājā—gahetvā taṃ matamanussanī—thapāpetvā matthakamajjhe—paharitvā—koṭṭhāse—dvinnaṃ yakkhānaṃ samavibhattam—vibhajitvā adāsi, datvā ca—khaggaṃ—sannayhitvā atṭhāsi.

6. Construct short sentences in Pāli embodying any *five* of the following :—*sanikaṇ* *sanikaṇ*, *sakani* *sakani*, *sakini* *sakini*, *yena tena*, *tena tena*, *aññamaññāsi*, *aparabhāge*, *raṭṭhāraṭṭhāsi*. 5

7. (a) Illustrate the use of dative and locative, desiderative, infinitive, and gerund forms. 5

(b) Expound any *five* of the following compounds :—*devamanussā*, *andhavadhīro*, *anariyo*, *catuppadaṇi*, *pabhaṅkaro*, *chinnahattho*, *macchamanissāṇ*, *tiṅgaṇi*. 5

8. Translate the following Pāli passages into English :— 30

(a) Yathā mātā pitā bhātā aṇṇe vā pi ca jātakā |
gāvo no paramā mittā yāsu jīyanti osadhā ||
Annadā baladā c' eti vaṇṇadā sukhadā tathā |
etaṃ atthavaṇṇaṃ jātva nāssu gāvo haṇiṃsu te ||

(b) Ath' okadivasan uparājā pītu uyyāna-kīlaṃ gacchantassa mahān-taṃ yasaṃ disvā tasmiṃ lobhaṃ uppādetvā, "mayhaṃ pitā mama bhātī-sadiso. Sace etassa maraṇaṃ olokessāmi mama mahallaka-kāle rajjati labhissāmi" ti cintevā bodhisattassa taṃ attham ārocesi.

9. Translate any *two* of the subjoined extracts into Pāli :— 25

(a) As he sat there, the householder Nakulapitā addressed the Blessed One, saying, 'Venerable Sir, I am a broken-down old man, aged, far gone in years, I have reached life's end. I am sick and always ailing.'

(b) Work, work, my boy, be not afraid :
Look labour boldly in the face ;
Take up the hammer or the spade,
And blush not for your humble place.

(c) So I love thee, I praise thee, O my country, thou God-gifted land of heroes, scholars, saints, and poets. Bestow a blessing on me.

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COMPULSORY PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English any two of the following passages :-

A

لم نشرح لك صدرك - ورضعنا عنك وزرك - الذى انقض
 ظهرك - ورضعنا لك ذكرك - فان مع العسر يسرا - ان مع العسر يسرا -
 فاذا فرغت : ب - و الى ربك فارغب *

B

ان فى خلق السموات والارض واختلاف الليل والنهار لآيات لاولي
 الاباب - الذين يذكرون الله قياما وقعودا وعلى جنوبهم ويتفكرون فى
 خلق السموات والارض - ربنا ما خلقت هذا باطلا -
 عذاب النار *

عمر بن الخطاب - هو اول من سمي من الخلفاء بامير المؤمنين -
 واول من ارخ التاريخ الهجرى ومصر الامصار ودون الدواوين - ولد
 رضى الله عنه بعد مولد النبى صلى الله عليه وسلم وحضر مع رسول الله
 الغزوات كلها - ثم لما قبض صلى الله عليه وسلم اعان على ابنى بكر
 على تولية الخلافة - ولما احس ابو بكر بالموت عهد بالخلافة اليه فقام
 مقامه -

2. Answer any three of the following questions :—

15

(a) Re-write the extract I. C. with vowel-points.

(b) Mention the صيغه of the following :—

يتفكرون - قعدوا - ترون

(c) Give the opposite numbers of any five of the following :—

صدر - ظهر - ذكر - ارض - دواوين - نار - جنوب - تاريخ - طوائف

(d) Name the افعال القلب and form a sentence with each of them.

(e) Form imperatives (امر حاضر معروف) from—

ارخ - يرفع - يتفكرون

3. Translate into English the extract (a) and either (b) or (c) :—

12

(a)

العلم زين و تشریف لصاحبه * فاطلب هديت فنرون العلم و الادب
كم سيد بطل اباءه نجب * كانوا الرؤس فامسى بعدهم ذنب
و مقوف خامل الاباء ذى ادب * نال المعالى بالادب و الرتب
العلم كنز و ذخرا فناء له * نعم القرين اذا ما صاحب صحبا
(b) ان السندباد الحمال لما قبل الارض و وقف هو منذكس الراس
فان له صاحب المكان بالجلوس - فجالس و قد قربه اليه و صاريوانسه بالكلام
و يوجب به - ثم انه قدم له شياً من انواع الطعام المقتخر النفيس - فتقدم
السندباد الحمال و سمي و اكل حتي شبع - و قال الحمد لله على كل حال -
ثم انه غل يديه و شكرهم علي ذلك *

11

(c)

كلب مرة كان في دار اصحابه دعوة فخرج إلى السوق فسلقى
كلباً آخر - فقال له اعلم ان عندنا دعوة فامض بنا لنا كل و نشرب اليوم
جميعاً - فمضى معه - فدخل به الى المطبخ - فلما نظره الخدام قبض احدهم
على ذنبه و رمى به من العائط الى خارج الدار - فوقع مغشياً عليه - فلما
افاق انتفض من التراب فراه اصحابه - فقالوا اين كنت اليوم فاننا نراك ما
خرجت اليوم تدري كيف الطريق *

11

الطفيلي ربما يصير مطرودا بعد الاستخفاف و الهوان *

4. Either, Reproduce the story of على شار .

6

or, Justify the remark in your text book, viz. :-

عمارة البلاد بالعدل في الرعية

by writing the story of Nushirwan and his justice.

5. Correct and re-write the following with vowel-points :-

10

- (a) صار عيد الله امير المسلمين
(b) ان ابوة عالم
(c) ان تفعل هذا افعل
(d) المسلمون هذا الزمان فقير
(e) جاعوني عشرين رجال

6. Translate into Arabic :-

24

- (a) Zaid has gone to the madrasah.
(b) To-morrow he will go to Delhi.
(c) Abdullah's father has become very poor.
(d) One hundred and forty men came to me.
(e) How excellent is this picture !
(f) He purchased sixteen maunds of ghi and made a good profit.
(g) Ahmad's son is studying in the second class.
(h) The man came with a big fish which astonished all the people.

ADDITIONAL PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate in your own English one from Group A and another from Group B.

10

A

- (a) اعلموا يا سادة يا كرم انه كان لى اب تاجر و كان من اكابر الناس و التجار و كان عنده مال كثير و نوال جزيل قد مات و انا ولد صغير و خلف لى مالا و عقارا و ضياعا - فلما كبرت وضعت يدي على الجميع و قد اكلت اكلا مليحا و شربت شربا مليحا و عاشرت الشباب بلبس الثياب و مشيت مع الكنان و الاصحاب و اعتقدت ان ذلك يدوم لى و ينفعنى - و لم ازل على هذه الحالة مدة من الزمان - ثم انى رجعت الى عقلى و افقت من غفلتى فوجدت مالى قد مال و حالى قد حال *
- (b) (1) الحمد لله رب العلمين - الرحمان الرحيم - مالك يوم الدين - اياك نعبد و اياك نستعين - اهدنا الصراط المستقيم - صراط الذين انعمت عليهم - غير المغضوب عليهم و لا الضالين *

(٢) قل هو الله احد - الله الصمد - لم يلد ولم يولد و لم يكن له
فرا احد *

(٣) اذا اعطيتك الكوثر - فصل لربك وانحر - ان شئت لك هو الابر *

(٤) الكتاب نعم الا نيس في ساعة الوحدة و نعم الرفيق في دار العربة
هو مملوء من العلم و الطوف و مشحون من المزج و البجد - انه ينطق عن
الموتى و يترجم عن الالحياء - ان غضبت لم يغضب - و هل سمعت بمعلم
تحلى بخصال كثيرة و جمع اوصافا عديدة ان وعظ اسمع و ان ابني
ادمع يفيدك و لا يستفيد منك يزيدك و لا يستزيد منك - هو مخزن
الحكم و معدن النعم - مونس لا ينضم - يفيدك علم الا و لمن و بخدرك
من اخبار المتأخرين *

B

(a)

بقدرك السد تكتسب المعالي * و من طلب العلي سهر المياني
و من طلب العلي من غيرك * اضع العمر في طلب المحال

(b)

السلم اشرف شي - ثلث رجل * من لم يمدن فيه علم لم ينس رجلا
تعلم العلم و اعمل يا اخي به * فاعلم زين امن بالعمل قد عملا

(c)

اكل شي زينة في الورى * و رينة
قد يشرف المورد بادابه * فميد و ان هن رصيع المسب

2. Write down in your own words any one of the following stories : - 10

حداثة المهدي و الاعمالي (b) الحجاج و العجوز (a)

يحيى اليرموني (c)

3. Conjugate ماضى معروف and مضارع معروف from 10
فطر and قبل in the forms of انفعل and تفاعل respectively.

4. Answer any three of the following questions :-

15-

(a) Conjugate رمى مضارع معروف

(b) Define the following grammatical terms :-

لغيف مقرون - لغيف مفروق - ناقص - اجوف - مضاعف

(c) Define the غير منصرف and illustrate it with examples.

(d) What are the افعال المدح والذم ؟ Make short sentences to explain their use.

(e) Re-write with full vowel-points the extract (a) in Group B in Question 1.

5. Translate into your own English : Either.

30

اول زوجات الطفل الطاعة والولد المطيع الاقارب و معلميه يكون عاقلا و
مردبا و يكون معظما لله و مكرما اباه و امه و محبوبا لدى اقاربه و يسلك
جيذا في جميع الاشياء و يكتسب جملة معارف نافعة و يكون محبوبا عند
الجميع و مفرحا لنفسه *

(1)

سليم عمره خمس سنوات و اخذه حسنة عمرها سبع و سعدى عمرها تسع
و هم يحب بعضه بعضا محبة شديدة و اذا خرجوا الي اللعب لا يختصمون و
هم الان ذاهبون الي المدرسة و في اثناء مرورهم علي الطريق تأخذ حسنة
بيد سليم اثلا تصدمه العربات و البجيات او تعثر رجله بحجر *

6. Translate the following into Arabic :

25

- The king came yesterday.
- Some books are useful and some harmful.
- This ship is carrying 100 passengers to Egypt.
- This cat has a tail.
- I intend to go to the market this morning.
- The monkey has intelligence like the intelligence of a man.
- Oh my friend ! Where are you going ?
- He did not do that.
- I walked from Baghdad to Damascus.
- A learned man came to your house last night.

PERSIAN

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COMPULSORY PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English one of the following extracts : -

12

A

سر چه آرائی بدستار ای پسر
 نا توانی دل بدست آری پسر
 تا نگیری ترک عز و مال و جاه
 از همه بر سر نیائی چون کلاه
 نیست بر تن بهتر از تقوی لباس
 در تکلف مرد را نبود اساس
 هر که او در بند آرایش بود
 در جهان فروزند آسایش بود
 عاقبت جز نامرادی نبودش
 بهره از عیش و شادی نبودش
 خود ستائی پشه شیطان بود
 هر که خود را کم زند مرد آن بود

B

یادم آید ز عهد صغر
 کده عیسی برون آمدم با پدر
 بباز یچه مشعول مردم شدم
 در آسوب خلق از پدر ام شدم
 بر آوردم از هول و دهشت خورش
 پدر ما دهانم بمالید د
 ده ای شوخ چشم آخرت چند بار
 نگفتم ده دست ز دامن مدار
 به تنها نداند شدن طفل خرد
 کده مشکل بود راه نادیده بود
 نوهم طفل زاهی بسعی ای فقیر
 برو دامن نیک مردان بئیر

2. Give the substance of the discourse *either* on 8
 - بیان فوائد خاموشی or on بیان حسن خلق

3. Explain *either* A or B :

6

A

ند قبای چرخ را خیاط صنع
 خاص بهر قامت پرداخته
 جز خدا کس حد تر نشاخت ز ازل
 کس خدا را همچو تر نشاخته
 تا فته نور تو از روز ازل
 پر تو خود را ابد انداخته

B

چشم تا بیناست قرآن را به یمن
 گوش تا شنواست بشنو حرف دین
 در حیات فکر مرگ خویش کن
 فکرت روز پسین از پیش کن
 در چمن یاد اسیری دده باش
 در جوانی فکری پیری دده باش

4. Answer any *four* of the following :

20

(a) Mention *کلمات تشبیه* and give examples of their use in sentences.

(b) What is *اسم فاعل سماعی* and how is it formed ? Give examples.

(c) State whether these words are singular or plural. Give the opposite number in each case and also the meaning of each word :

غایله - ایام - حکمت - امثال - ذکر

(d) State the *صیغه* of the following : --

رفته بود - می کن - بیا - خراهم گفت - بدی

(e) Give the rules for the formation of *اسم تصغیر* in Persian, with examples.

5. Translate into English any *two* of the following extracts :

18

A

نابینائی در شب تاریک چراغی بدست و سبوی بردوش در راهی
 میرفت - فضولی بزمی رسید و گفت - ای نادان روز و شب ترا یکسان
 است و روشنی و تاریکی در چشم تو برابر - این چراغ را فائده
 چیست - نابینا بخندید و گفت - این چراغ نه از بهر خود است - از برای چون
 تو کور دانی بخود است - تا بمن پهلوانزند و سبوی مرا نشکنند *

B

در فصل زمستان که بهار مستان است - دزدی به خانه فقیری در آمد -
چندانکه جستجو کرد غیر از جبه که بجهه ارزن نمی از زب چیزی نیافت -
از حرص خویش و قذاعت درویش بسیار شرمسار شد - فقیر از آنجا که خوری
درویشان و خصلت ایشان است برخاست - و جبه کهنه را بردوش ری افکند
گفت - مرا معذور دار که چیزی جز این لائق نثار ندارم *

C

یکی از ملوک خراسان سلطان محمود سبکتگین را بخواب دید بعد از وفات
او بصد سال - که جمله وجود او ریخته بود و خاک شده مگر چشمانش که در
چشم خانه میگردیدند - سائس حکما از تاویل این خواب فرو ماندند - مگر
درویشی که تعبیر آن بجا آورد و گفت - هنوز چشمش نگرانست ده ملکش
بُ دگرانست *

6. *Either*, Give a short description of the city of 10
بیت المقدس or of مصر.

Or, Reproduce the story from Hazin (حزین) begin-
ning with ستم پیشه را به بستند سخت.

7. Correct the following :

6

طفاً آمده است - دیر وضی خواهم آمد - من و او هر دو این کار را کردید -
بر و جمله مردمان را اینجا بخوانید - زید و بکر زنم - اینجا حاضر باش *

8. Translate into Persian (a) and *either* (b) or (c) :-

25

(a) I am a good boy. I rise early and go to bed early. I do not mix
with bad boys. I go to school fifteen minutes before the time. I stand and
salute the teacher when he enters the class.

(b) He is a clever man. He works hard day and night. He obeys his
parents and never tells lies. He is honest and kind to others. Every one likes
him and admires him. He earns his livelihood by work and lives in comfort
and peace.

(c) Brother ! come to the garden. The air is cool. And look at the
trees and flowers ! How beautiful they are ! The leaves are green and the
roses are red. Let us sit here for a while and enjoy the charming scenery.

ADDITIONAL PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. (a) Translate the following passages into English : 10

طائفه افغان وقتي کاشان را غارت کردند - خواجه بردند و خواجه ريختند -
تا هر کجا جسمه عريان شد و چشمه گريان گرديد - قضا را کاشانيان افغانه را
در کاشانه برده کشتند - يکے از اهل آن ديار بر سرش بناليد - يکے گفتش -
اے برادر - سيرت عاقلان است که بر دوست بنالند نه بر دشمن - نه اين از
آن طائفه است که هيچ زنده بر تن هيچ زنده نگذاشتند - و هر کجا ناله و
خوانه راديدند نان را خوردند و خون را بردند - گفت - اے رفيق - حق با
تست ليکن چون من دشمن را بدين حال بدم دوست دارم -

اماره تو دشمن نست

چون شود کشته دوست گردد دوست

من بر دوست است و جان پر مغز

مغزت از آرزو است بشکن پوست

- (b) Illustrate the meaning of the following :

پوست شدستن - هيچ زنده بر تن هيچ زنده نگذاشتند - کاشان -
حق، با تست -

2. What do you know about the بيت المقدس and 5 where is it situated ? Give a brief description of it as in your text book.

3. Describe briefly صفت گشودن در کعبه in Persian. 5

4. Give the different kinds of اضافت with illustrations. 5

5. Differentiate between اسم مفعول and اسم فاعل, مفعول and فاعل.

6. Translate the following passages into English :-

15 (a) آنچه دانش بهتر است بر جائے بدترین هم همچنان نفیس است - چنانچه جوهر آگ در آب و گل پیغند در اصل و قیمت او هیچ فرق نیاید - و آنچه دانش بد است اگر بر مقام رفیع ترین برود همچنان بد ماند چنانچه خاک کر بر آسمان هم رود همچنان خسیس باشد - گر کسی مرد اهل است جائے افسوس باشد گر او را تربیت نه دهند اما هر ده مرد نا اهل است او را تربیت دادن بے سود است - هر چه بذات خود ذلیل است با نسبت عالی قیمتش نیفزود - خاکستر به آتش نسبت دارد ده جوهر علوی است راسے چون دران خود هنر نیست با خاک برادر است *

15 (b) اے ملک جوان بخت سندیاد حمال چون در پیش حاضران سر بزر انداخته بستاند خداوند مجلس او را به نشستن دستور داد و نزدیک خرد خواند و او را خوش آمد و از بهر دلجوئی او سخن آغاز کرده همی پرسید تا اینکه سفره خوردنیها حاضر آوردند سندیاد حمال پیش آمد - نام خدا بر زبان برد و بقدر لغابت خوردنی بخورده دست بسته شکر نعمت بجا آورد آنگاه خداوند مجلس رفت - نام تو چیست و چه صنعت داری *

7. Give a short biographical note on Sadi in 5 English or the substance of **پند خسرو به شیروبه** -

8. Translate into Persian :

(a) Railways are very useful in time of famine. When the rain does not fall, the crops cannot grow, and the people suffer much. In olden days, thousands of people used to die in time of famine. But now, food can be brought quickly, from distant places. In this way, thousands of lives are saved by the railways. So you see, we all owe a great deal to George Stephenson. We should remember him sometimes, when we receive a letter, or a book, or a newspaper, and we should thank him when we enjoy the things that the railway brings us.

(b) A wooden bridge had caught fire : among those who saw the fire was 15 a boy of twelve years of age. This boy knew that a train would soon come up ; so he ran as hard as he could to be in time to stop it. The boy ran straight on towards the train with a handkerchief tied to a stick. The driver saw him and stopped the train. In one minute more it would have been dashed to pieces.

LATIN

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COMPULSORY PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate:—

12

(a) Bello Helvetiorum confecto totius fere Galliae legati, principes civitatum, ad Caesarem gratulatum conveniunt: Intellegere sese, tametsi pro veteribus Helvetiorum iniuriis populi Romani ab his poenas bello repetisset, tamen eam rem non minus ex usu terrae Galliae quam populi Romani accidisse, propterea quod eo consilio florentissimis rebus domos suas Helvetii reliquissent, uti toti Galliae bellum inferrent imperioque potirentur locumque domicilio ex magna copia deligerent, quem ex omni Gallia opportunissimum ac fructuosissimum indicassent, reliquasque civitates stipendiarias haberent. Petierunt, ut sibi concilium totius Galliae in diem certam indicare idque Caesaris voluntate facere liceret: sese habere quasdam res, quas ex communi consensu ab eo petere vellent. Ea re permissa diem concilio constituerunt et iurjurando, ne quis enuntiaret, nisi quibus communi consilio mandatum esset, inter se sancierunt.

(b) Dum haec in colloquio geruntur, Caesari nuntiatum est, equites Ariovisti propius tumulum accedere et ad nostros adequitare, lapides telaque in nostros conicere. Caesar loquendi finem facit seque ad suos recepit suisque imperavit, ne quod omnino telum in hostes reicerent. Nam etsi sine ullo periculo legionis delectae cum equitatu proelium fore videbat, tamen committendum non putabat, ut pulsus hostibus dici posset eos ab se per fidem in colloquio circumventos. Posteaquam in vulgus militum clatum est, qua arrogantia in colloquio Ariovistus usus omni Gallia Romanis interdixisset, impetumque in nostros eius equites fecisset, eaque res colloquium ut diremisset, multo maior alacritas studiumque pugnandi maius exercitui injectum est.

2. Turn from *intellegere* to *habere* in 1 (a) into *oratio recta*, giving the exact words of the speakers.

3. (a) Why are *posset* and *interdixisset* in 1 (b) in the subjunctive mood?

(b) Explain the construction *dum . . . geruntur*, and the use of *concre*.

4. Who were the Helvetii, Ariovistus, Orgetorix? Why did Caesar go to Gaul? 4

5. Give the principal parts of—*iudico*, *peto*, *duco*, *circumvenio*, *audio*, *video*. 4

Parse—*omni*, *passim*, *usus*, *inferrent*.

6. Translate:—

12

(a) Aeneas scopulum interea conscendit, et omnem prospectum late pelago petit, Anthia si quem iactatum vento videat, Phrygiasque biremes, aut Capyn, aut celsis in puppibus arma Caici.

navem in conspectu nullam, tres litore cervos
 prospicit errantes; hos tota armenta sequuntur
 a tergo et longum per valles pascitur agmen.
 constitit hic, arcumque manu celeresque sagittas
 corripuit, fidus quae tela gerebat Achates;
 ductoresque ipsos primum, capita alta ferentes
 cornibus rhoræis, sternit, tum vulgus; et omnem
 miscet agens memora inter frondea turbam.
 nec prius absistit quam septem ingentia victor
 corpora fundat humi, et numerum cum navibus aequet.
 hinc portum petit et socios partitur in omnes.

- (b) Tamque ascendebant collem qui plurimus urbi
 imminet, adversasque aspectat desuper arces.
 miratur molem Aeneas, magalia quondam;
 miratur portas, strepitumque et strata viarum,
 instant ardentes Tyrii: pars ducere muros,
 molirique arcem et manibus subvolvere saxa;
 pars optare locum tecto, et concludere sulco;
 iura magistratusque legunt, sanctumque senatum;
 hinc portus alii effodiunt: hic alta theatris
 fundamenta locant alii, immanesque columnas
 rupibus excidunt, scenis decora alta tuturis.
 . . . 'O fortunati, quorum iam moenia surgunt!'
 Aeneas ait, et fastigia suspicit urbis.
 infert se saeptus nebula, mirabile dictu,
 per medios, miscetque viris; neque cernitur ulli.

7. In what kind of verse is the *Aeneid* written? Explain, by scanning any *four* lines in either passage in Question 6, how it is constructed. 5

8. Give the meaning of—*Aquilo*, *Notus*, *Syrtes*, *gaza*, *cortex*, *prora*. 5

Parse:—*latentia*, *tollit*, *plurimus*, *vulgus*, *humi*.

9. Translate:— 25

* (a) *An interrupted battle.*

Iam steterant acies ferro mortique paratae:
 iam lituus pugnae signa daturus erat:
 quum raptae veniunt inter patresque virosque;
 inque sinu natos, pignora cara, tenent.
 ut medium campi scissis tenere capillis,
 in terram posito procubere genu:
 et quasi sentirent, blando clamore nepotes
 tendebant ad avos brachia parva suos.
 qui poterat, clamabat avum, tunc denique visum;
 et qui vix poterat posse coactus erat.
 tela viris animique cadunt; gladiisque remotis
 dant soceri generis, accipiuntque, manus;
 laudatasque tenent natas; scutoque nepotem
 tert avus: hic scuti dulcior usus erat.

(b) *Xerxes, king of Persia, collected a fleet to invade Greece. The Athenians, consulting the oracle, get this famous answer about the wooden walls.*

Cuius de adventu cum fama in Graeciam esset perlata, et maxime Athenienses peti dicerentur propter pugnam Marathoniam, miserunt Delphos consultum quidnam facerent de rebus suis. Deliberantibus Pythia respondit ut moenibus ligneis se munirent. Id responsum quo valeret cum intellegeret nemo, Themistocles persuasit consilium esse

Apollinis ut in naves se suaque conferrent; eum enim a deo significari murum ligneum. Tali consilio probato addunt ad superiores totidem naves triremes, suaque omnia quae moveri poterant partim Salamina partim Troezena deportant, arcem sacerdotibus paucisque maioribus natu ac sacra procuranda tradunt, reliquum oppidum relinquunt.

Salamina, Troezena, acc. of Salamis and Troezen.

10. Translate into Latin:—

25

- (a) He promised to go to Rome in the month of August.
- (b) It is generally agreed that he was a man of understanding.
- (c) The river was so deep that the horses could not cross.
- (d) After this was done the soldiers withdrew to their camp.
- (e) Relying on the priest's advice, the citizens declined to listen to what the enemy had to say.
- (f) That is why I have no wish to leave my own country and cross the sea.

ADDITIONAL PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate:—

10

(a) Ita proelium restitutum est, atque omnes hostes terga verterunt neque prius fugere destiterunt quam ad flumen Rhenum milia passuum ex eo loco circiter quinque pervenerunt. Ibi perpauci aut viribus confisi tranare contenderunt, aut lintribus inventis sibi salutem reppererunt. In his fuit Ariovistus qui naviculam deligatam ad ripam nactus ea profugit: reliquos omnes equitatu consecuti nostri interfecerunt. Duae fuerunt Ariovisti uxores, una Sueva natione quam domo secum duxerat, altera Norica, regis Voctionis soror, quam in Gallia duxerat a fratre missam: utraque in ea fuga periit. Duae filiae harum, altera occisa, altera capta est.

(b) Talia iactanti stridens Aquilone procella
velum adversa terit, fluctusque ad sidera tollit.
Iranguntur remi; tum prora avertit, et undis
dat latus; insequitur cumulo praeceptus aquae mons.
hi summo in fluctu pendent; his unda dehiscens
terram inter fluctus aperit: furit aestus arenis.
tres Notus abreptas in saxa latentia torquet:
saxa vocant Itali, mediis quae in fluctibus, Aras;
dorsum immae mari summo, tres Eurus ab alto
in brevem et Syrtis urget, miserabile visu,
illiditque vadis atque aggere cingit arenae.
unam, quae Lycios fidumque vehebat Orontem,
ipsius ante oculos ingens a vertice pontus
in puppim terit; excutitur pronusque magister
volvitur in caput: ast illam ter fluctus ibidem
torquet agens circum, et rapidus vorat aequore vortex.
apparent rari nantes in gurgite vasto,
arma virum tabulaeque et Troia gaza per undas.

2. Write short notes on:—*legio, Belgae, auxilia, Babracte, Divitiacus, res frumentaria, familia, praetor.* 5

3. Give a brief summary of the first half of the first book of the *Aeneid*. 5

4. Translate:— 30

(a) *Progress of mankind—eating first grasses, then acorns, then corn*

Panis erant primis virides mortalibus herbae,
 quas tellus nullo sollicitante dabat;
 et modo carpebant vivax e cespite gramen,
 nunc equulae tenera fronde cacumen erant.
 postmodo glans nata est, bene erat iam glande reperta,
 duraque magnificas quercus habebat opes.
 prima Ceres, homine ad meliora alimenta vocato,
 mutavit glandes utiliore cibo.
 illa iugo tauros collum praebere coegit;
 tum primum soles eruta vidit humus.

(b) *Frachery of a friend of Pyrrhus contrasted with honesty of the Romans.*

Cum Pyrrhus rex in terra Italia esset et unam atque alteram pugnam prospere pugnasset, satisque angerentur Romani et pleraque Italia ad regem descivisset, tum Timochares regis Pyrrhi amicus ad C. Fabricium consulem furtim venit ac praemium petivit et si de praemio conveniret promisit regem venesis necare, idque facile esse lactu dixit quoniam filii sui pecula in convivio regi ministrarent. Eam rem Fabricius ad senatum scripsit. Senatus legatos ad regem misit mandavitque ut de Timochare nihil proderent sed monerent uti rex circumspectius ageret atque a proximorum insidiis salutem tutaretur.

necare se vocaturum.

5. Translate into Latin:— 30

(c) The fugitives finding their retreat intercepted halted on an eminence overhanging a stream, whereupon the general immediately set his men to throw up entrenchments and cut off their approach to the water.

(b) From youth up I have served the State. I have fought in many wars. I have held many offices. I have served it with arms and with counsel. Should I now desert it when danger threatens and enemies are many? Surely that is not the part of a good citizen.

(c) Although he had heard this from the spy he was incredulous, not thinking that any would be so rash as to march against him through that pass.

(d) For a long time the battle was indecisive. But towards evening reinforcements were seen in the distance, and the enemy retired in the direction of their own territory.

6. Give the degrees of comparison of—*bene, fortis, acer, arduus, humilis, magnopere.* 5

7. Give sentences illustrating the use of—*prae, coram, utram, licet, nisi.* 5

8. Give the Latin for—by forced marches, within human memory, once and again, right to the end, in vain, foot by foot, late into the night. 5

9. Show the derivation of *ser* only of the following:—*protect, interrupt, insect, peninsula, unanimous, translate, vestige, tradition, agriculture.* 5

FRENCH

Paper-setter and Examiner—REV. FATHER E. POPULAIRE, S.J.

COMPULSORY PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate *three* of the following extracts:—

24

(c) Ce vin parfumé qu'elle aimait tant, qui lui tenait chaud, qui lui mettait des ailes, on avait la cruauté de le lui apporter, là, dans sa mangeoire, de le lui faire respirer; puis, quand elle en avait les narines pleines, passe, je t'ai vu! La belle liqueur de flamme rose s'en allait toute dans le gosier de ces garnements. . . . Et encore s'ils n'avaient fait que lui voler son vin; mais c'étaient comme des diables, tous ces petits clercs, quand ils avaient bu! . . . L'un lui tirait les oreilles, l'autre la queue; Quiquet lui montait sur le dos, Béluguet lui essayait sa barrette.

(b) Le logis du poète est à l'extrémité du pays; c'est la dernière maison à main gauche, sur la route de Saint-Remy, — une maisonnette à un étage avec un jardinet devant. . . . J'entre doucement. . . . Personne! La porte du salon est fermée, mais j'entends derrière quelqu'un qui marche et qui parle à haute voix. . . . Ce pas et cette voix me sont bien connus. . . . Je m'arrête un moment dans le petit couloir peint à la chaux, la main sur le bouton de la porte, très ému. Le cœur me bat. — Il est là. Il travaille. . . . Faut-il attendre que la strophe soit finie? . . . Ma foi! tant pis, entrons.—

(c) Gardez-vous-en bien, interrompit le prier avec vivacité. Il ne faut pas s'exposer à mécontenter la clientèle. . . . Tout ce que vous avez à faire maintenant que vous voilà prévenu, c'est de vous tenir sur vos gardes. . . . Voyons, qu'est-ce qu'il vous faut pour vous rendre compte? . . . Quinze ou vingt gouttes, n'est-ce pas? . . . mettons vingt gouttes. . . . Le diable sera bien fin s'il vous attrape avec vingt gouttes. . . . D'ailleurs, pour prévenir tout accident, je vous dispense dorénavant de venir à l'église. Vous direz l'office du soir dans la distillerie.

(d) Fraiche sous son petit bonnet,
Belle à ravir, et point coquette,
Ma cousine se démenait.
Fraiche sous son petit bonnet,
Elle sautait, allait, venait,
Comme un volant sur la raquette;
Fraiche sous son petit bonnet,
Belle à ravir et point coquette.

2. Write briefly the story *either* of *La Mule du Pape*, *or* of *L'Agouti de la Sémillante*. 10

3. Give the principal parts of the verbs—*tenir, boire, peindre*. 6

4. Supply the proper forms of the verbs in brackets in the following sentences:— 10

- (a) Je voudrais qu'il (*crire*) à sa mère.
- (b) Il vint à moi et me (*soumettre*) une proposition.
- (c) Elles sont (*enchanter*) de vous rencontrer.
- (d) (*Dire*) moi s'il désire qu'on l'(*attendre*).
- (e) Il n'y avait personne qui le (*connaître*).

5. Give the French for the words in italics in the following (do not translate the other words):—(a) this boy and *that one*; (b) our boy and *theirs*; (c) *every* boy; (d) *few* boys; (e) *many* boys; (f) *too many* boys; (g) *other* boys; (h) *no* boy; (i) *several* boys; (j) *some* boys. 10

6. Translate into French:— 15

- (a) When did you say that you would come back?
- (b) I shall come back some weeks before Christmas.
- (c) He was walking in front of the town hall.
- (d) My brother has read this book two or three times.
- (e) He had just gone out when the telegram (*la dépêche*) came.

7. Translate into English:—

- (a) Elle avait pris ce pli (*habit*) dans son âge enfantin 13
De venir dans ma chambre un peu chaque matin.
Je l'attendais ainsi qu'un rayon qu'on espère;
Elle entra et disait: 'Bonjour, mon petit père';
Prenait ma plume, ouvrait mes livres, s'asseyait
Sur mon lit, dérangeait mes papiers, et riait,
Puis soudain s'en allait comme un oiseau qui passe.
Mors, je reprenais, la tête un peu moins lasse,
Mon œuvre interrompue, et, tout en écrivant,
Parmi mes manuscrits je rencontrais souvent
Quelque arabesque folle et qu'elle avait tracée.

(b) C'était un spectacle d'une beauté terrible. Mais personne ne pouvait s'arrêter à le regarder. Par bonheur le vent soufflait constamment dans une même direction, et par là l'incendie s'étendait sur une même ligne. Cependant il suffisait d'une flamèche, d'un brandon (*fluke*) pour allumer une autre portion du bois, et enlacer les voyageurs dans un cercle de feu infranchissable. Pour échapper à ce danger, ils se tenaient sur la lisière de la forêt, près des rives de l'étang, et s'en écartaient le moins possible. 12

ADDITIONAL PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

8. Translate three of the following extracts:—

- (a) Moi donc, qui dois souvent en certain lieu me rendre
Le jour déjà baissant, et qui suis las d'attendre,
Ne sachant plus tantôt à quel saint me vouer,
Je me mets au hasard de me faire rouer.
Je saute vingt ruisseaux, j'esquive, je me pousse.
Un docteur à cheval en passant m'éclabousse:
Et n'osant plus paraître en l'état où je suis,
Sans songer où je vais, je me sauve où je puis.

- (b) Le corps se perd dans l'eau, le nom dans la mémoire.
Le temps, qui sur toute ombre en verse une plus
noire,

Sur le sombre océan jette le sombre oubli.
Bientôt des yeux de tous votre ombre est disparue,
L'un n'a-t-il pas sa barque et l'autre sa charrue?
Seuls, durant ces nuits où l'orage est vainqueur,
Vos veuves aux fronts blancs, lasses de vous attendre,
Parlent encore de vous en remuant la cendre
De leur foyer et de leur cœur!

(c) Au dehors, le noir, l'abîme. Sur le petit balcon qui tourne autour du vitrage, le vent court comme un tou, en hurlant. Le phare craque, la mer ronfle. A la pointe de l'île, sur les brisants, les lames font comme des coups de canons.... Par moments, un doigt invisible trappe aux carreaux : quelque oiseau de nuit, que la lumière attire, et qui vient se casser la tête contre le cristal.... Dans la lanterne étincelante et chaude, rien que le crépitemment de la flamme, le bruit de l'huile qui s'égoutte, de la chaîne qui se dévide.

(d) Aux abords du palais, les bourgeois curieux regardent, à travers les grilles, des suisses à bedaines dorées qui causent dans les cours d'un air important. Tout le château est en émoi.... Des chambellans, des majordomes montent et descendent en courant les escaliers de marbre.... Les galeries sont pleines de pages et de courtisans en habits de soie qui vont d'un groupe à l'autre quêter des nouvelles à voix basse.... Sur les larges perrons, les dames d'honneur éplorées se font de grandes révérences en essuyant leurs yeux avec de jolis mouchoirs brodés.

(a) In what, according to you, does the charm of the *Letters de mon moulin* chiefly consist? 10

(b) Give a brief summary of the story which best illustrates your opinion. 10

3. (a) Give the feminine of—*turc, jumeau, favori*. 3

(b) Give the French for—my daughter and his your horse and this one ; this dog and yours ; which house? which of these houses? whose house? 6

(c) Write French (using *voir* and *entendre*)—he has seen you ; will he be seen he would not see them ; would he not hear us? that I may hear him ; I have heard nothing. 6

4. Translate into English:—

(a) Ah! c'est la saison douce et chère aux bonnes vieilles 10
Les histoires autour du feu, les longues veilles
Ne leur conviennent plus. Leur vieux mari, l'aïeul,
Est mort ; et, quand on est très vieux on est seul.
Le cœur des vieilles gens, surtout à la campagne,
Bat lentement, et très volontiers s'accompagne
Du mouvement rythmique et calme des berceaux.
Mais les petits sont grands aujourd'hui, ces oiseaux
Ont pris leur vol ; ils n'ont plus besoin de défense ;
Et voici que les vieux, dans leur seconde enfance,
N'ont même plus, hélas! ce suprême jouet.

(b) Tout en marchant, tout en causant, ils arrivèrent devant la façade du château. Il faisait une journée brûlante ; le ciel était chargé de nuages. Il y avait près d'une heure que Madame de Vaubert marchait sous des ombrages embrasés que ne rafraîchissait aucune brise. Elle s'assit sur une des marches de pierre, et passa son mouchoir sur son front et sur son visage, tandis que Stampy se tenait devant elle, immobile et roulant entre ses doigts les larges bords de son chapeau de feutre, qu'il n'avait pas cessé de tenir à la main durant toute la promenade. 9

5. Translate into French:—

(a) (i) What do you wish me to do? 15
(ii) Wait a moment, and I will tell you.
(iii) This is the man we met yesterday.
(iv) It rained almost the whole day long.
(v) People get up very early in the country.

(b) Shutting the door, he ran into the road. Not far from there he had seen in the afternoon a garden surrounded by a high wall. He ran in that direction. Once he turned round, and saw a lantern dancing in the road. If he could only find an entrance into the garden on the other side of that wall! When he arrived at another corner he turned to the right. As he turned he heard voices on the road. 10

HINDI (FOR MALE CANDIDATES)

Paper-setters— Mr. NALINIMOHAN SANYAL, M.A.
PANDIT SAKALNARAYAN SARMA

*Examiner—*SRIMATI PREMLATA GHOSH, B.A.

COMPULSORY PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate *three* of the following extracts into English— 15
one from Group A and *two* from Group B --

GROUP A

- (i) घन घनड नभ गरजत घोरा । प्रिया-हीन डरपत मन मोरा ॥
दामिनि दर्माक रह्यो घन माहीं । खल के प्रीति जथा थिर नाहीं ॥
बरषहिं जलद भूमि निरारायं । जथा नवहिं बुध विद्या पाए ॥
बूंद अघात सहहिं गिरि कैसे । खल के बचन संत सह जैसे ॥
कुद्र नदी भगि चली तोराई । जस घोरहु धन खल इतराई ॥
भूमि परत भा डाँबर पानी । जिमि जीवहि माया लपटानी ॥

- (ii) निकसत म्यान तें मयूरें प्रलै भानु कैसे,

फारें तम-तीस से गयंदन के जाल को ।

नागति लपटि कंठ बैरिन के नागिनी सी,

कद्रहिं रिझावें दै टे सु'डन के साल को ।

लाल हितिपाल कवसाल महाबाहु बली,

कह्यो लौ' बखान करौ' तेरी करबाल को ।

प्रतिभट कटक कटील केते काटि काटि,

कालिका सौ कलिक कलैऊ दैति काल को ॥

GROUP B

- (iii) सहज पवित्र जरीर, पावन कर नहिं काल तेहि ।

पावक, तीरथ-नौर, युद्ध और से झेत नहिं ॥

कुल जस राखत भूप लखि मानत पुराण ।

यहि हित सो ककु मै कक्षा रक्षा न सी तब जीग ॥

दंत सुगन्ध सुभाव सन नित जो कुसुम सुझाय ।

ताहि धारिये सीस पर नाभि पारिये पाय ॥

(iv) लक्ष्मी चौड़ी वासनाओं का निवास उस स्थान में नहीं। आकाश पातालों की एक करनेवाले विचारों का प्रवेश वहाँ नहीं होता। बड़ा ही शान्तिमय एकान्त स्थान है। सौंदर्य आदों रौति से जीवन बिताने के लिये उससे अच्छा धीर कोई स्थान नहीं हो सकता।

(v) विचारने पर ज्ञात होता है कि जिस एक इन्द्र, एक आत्म, एक तत्त्व, धीर अत्यन्त दूरवर्ती एक ईश्वरोपलब्ध्य की धीर यह समय सृष्टि जी मधुर, मन्द, अदृश्य गति तथा अज्ञात रूप से चलायमान है, वह प्रेम छोड़कर दूसरा क्या हो सकता है ?

2 (a) Parse the words underlined in Question 1 5

(b) Write sentences using *five* of the following expressions :—रेखें मौजना, जी चलना, गीद भरना, साथ देना, लत उड़ाना, मुँह की खाना, नह घूँट पीना, पाला मारना। 5

(c) Give the meanings of *five* of the following words :—सौरी, शान्तिता, मित्रत-समाजत, आवभगत, प्रारब्ध, मर्त्यलोक, विषय-भोग, स्फटिक, मर्मस्थल, भूख, परमारथ, उपचार। 5

3. (a) Give a short account in Hindi of the birth of Sri Krishna. 10

(b) Describe briefly in Hindi the visit of Hanumān to Lankā in search of Sītā. 10

4. (a) Write sentences to illustrate the different uses of *two* of the following words :—कान, टीका, बल, and बारा। 6

(b) Illustrate the use of the infinitive mood ending in ना as an adjective, and as the imperative mood. 3

(c) How are adjectives compared in Hindi ? Answer with illustrative sentences. 6

(d) Re-write the following correctly :— 10

कमानेवाला एक लड़का है। खानेवाला चार प्राणियाँ हैं। रोज़ का कमाई रोज़ खतम हो जाता है। दो दिनों से वह लड़का बेगार में पकड़ा रहा। लौटते रात नौ बज जाते हैं। कल रात से उसका बुखार चढ़ आया है। सिपाही आज फिर पकड़ने आकर बुखार बढ़ाना समझके उसे बहुत मारा।

5. Translate into English :— 25

खेज की नहर के खुदने के पहले योरप से पूर्वीय देशों की जाने के लिये "केप आफ गुड होप" का चक्कर लगाना पड़ता था, और तब भारतवर्ष की यात्रा में योरपवालों की महीनों लग जाते थे। जहाँ अब खेज नहर है, वहाँ पहले दो चार ताल थे। उन्हें देखकर लिहाप नाम के एक बुद्धिमान फ्रांसीसी की पहले पहल इन तालों की एक में मिलाकर इस संयुक्त खेज जलाशय की उत्तर में भूमध्य-सागर और दक्षिण में लाल-सागर में मिला देने की शक्ती। इस प्रकार पूर्वीय देशों में व्यवसाय के लिये एक बड़ी सुगमता देने की सम्भावना देखकर शीघ्र ही खेज का काम शुरू कर दिया गया, और काफी धनव्यय करने के उपरान्त नहर तैयार हो गई।

ADDITIONAL PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate one of the following passages into English :— 10

(a) आइ रहे जब तें दीउ भाई ।

तब तें चितकूट कानन-कवि,

दिन दिन अधिक अधिक अधिकाई ।

सीता-राम-लखन-पद अंकित,

अबनि सीहावनि बरनि न जाई ।

मंदोकिनि मज्जत अबलोकत

बिबिध पाप त्रयताप नसाई ।

उकटेउ हरित भए जल-थल-रुह

नित नूतन राजीव सुहाई ।

फूलत फलत पल्लवित पलुहृत

बिटप बेलि अमित सुखदाई ।

सरित सरनि सरसीरुह संकुल

सदन सँवारि रमा जनु काई ॥

(b) चिंताज्वाल शरीरबन दावा लगि लगि जाय ।

प्रकट धुवां नहि देखिये उर अंतर धुंधुवाय ॥

उर अंतर धुंधुवाय जरै ज्यों कांच की भट्टी ।

जर गयी लोह मांस रह गयी ह्राड़ की ठट्टी ॥

कह गिरिधर कविराज सुना हो मेरे मिता ।

वे नर कैसे जिये जाहि तन व्यापत चिंता ॥

2. Give in your own Hindi a short account of the exile of Sītā as given in your text-book. 10

3. Translate two of the following passages into English :—

(a) वर्तमान समाज के संगठन में स्त्री-जाति का कुटुम्ब के अतिरिक्त अन्य कहीं स्थान नहीं है। हिन्दू-समाज में स्त्रियों का काम विवाह करने और बाल-बच्चों की परवरिश कर लेने के सिवा कुछ नहीं समझा जाता। हिन्दू-स्त्रियों का कार्य-क्षेत्र यहीं तक सीमित रहता है। इस क्षेत्र से बाहर जो कुछ होता है उससे उनका न कोई सम्बन्ध रहता है और न उसका उनको कुछ ज्ञान ही होता है। इतने संकुचित क्षेत्र में रहने का परिणाम यह हुआ है कि वे कुटुम्ब

का पालन भी उचित रीति से नहीं कर सकतीं। अन्ततः हिन्दुओं की बर्तों की संसार भर में सबसे बुरी तरह परवरिश भी होती है। 15

(b) उस दिन सबेर से ही आषाढ़ की झड़ी लगी थी। मोहनलाल उस वर्षा में अपना छाता लगाये अपने निश्चित स्थान पर खड़ा भोग रहा था। पड़ोस के एक व्यक्ति ने दफ्तर आते हुए उसे इस प्रकार खड़ा भोगता हुआ देखकर पूछा—क्यों मोहनलाल जी, ऐसी वर्षा में क्यों खड़े हैं? मोहनलाल ने दांत निकालकर अप्रतिभ हँसी से हँसते हुए कहा—यों ही एक आदमी की प्रतीक्षा में खड़ा हूँ। मोहनलाल के सारे कपड़े भोग गये थे। वह पानी में सराबोर होकर दफ्तर पहुँचा। वह अपने भोगे जूतों से पानी बहाकर और कोट के कोने निचीड़कर कुर्सी पर बैठा। 15

(c) मैंने आँख उठाकर देखा। एक जीर्ण-शीर्ण अकाल-वृद्ध पुरुष सम्मुख खड़ा था। आँखें सिर में घँस गई थीं, दाढ़ी और मूँछों के बाल बढ़कर चिनौने हो गये थे। गाल चिपककर मानी खो गये थे। चेहरे की हड्डियाँ निकल आई थीं। रंग बिलकुल मुर्दे के समान था। सिर पर एक मैला चिपड़ा लपेटा हुआ था। बदन पर पट्टू का एक पुराना कोट था, जिसमें असंख्य छेद थे। उसके पैर नंगे थे और धूल से आवृत। धोती के नाम पर एक अंगीठा सा कमर से लपेटा हुआ था। चण भर में मैंने उस व्यक्ति की सिर से पैर तक देखा। हटाने उसके चेहरे पर जाकर मेरी आँखें रुक गईं, और दूसरे चण ही मैंने उसे पहचान लिया। 15

4. (a) Frame sentences using compound verbs ending in—
जाना, जाना, देना, लेना, चाहना, चुकना, डालना, and पड़ना। 8

(b) Re-write the following correctly :— 10

- (i) तू उसे देखकर क्यों मुस्करा दिया।
- (ii) मेरी बकरी ने तीन बच्चे जनी।
- (iii) यह पुस्तक किसने लाई है।
- (iv) उनकी सेवा में अनेक नौकरों प्रस्तुत रहते हैं।
- (v) पिता जी आज मुझे यह किताब दिये हैं।
- (vi) मैं अभी नहीं नहाया।
- (vii) कौन गाँव में आपका घर है।
- (viii) इस डिब्बे में पान है।
- (ix) यह लड़का आज बहुत मार खाया है।
- (x) स्कूल जाने के लिये मैं रोज़ मेरे घर से १० बजे निकलता हूँ।

(c) How are the genders of words denoting inanimate objects determined? Explain with illustrative sentences. 7

5. Translate the following passage into Hindi :—

25

In a town in Persia there lived two brothers, one named Qasim, the other Ali Baba. Their father had left them only a little property which was divided equally between them. Qasim married a rich wife, who had a large shop and a warehouse full of rich goods. Thus he was one of the richest merchants in the town, and lived at ease. Ali Baba married a woman as poor as himself. He lived in a poor hut, and used to support his wife and children by cutting wood in a forest near the town. This he brought every day, upon three asses, to sell in the town.

One day, when Ali Baba was in the forest, he saw at a distance a cloud of dust which seemed to come towards him. As it came nearer he saw it was made by a number of horsemen. Ali Baba was afraid that they were robbers, so he climbed up a large tree and hid himself amongst the branches.

URDU (FOR MALE CANDIDATES)

Paper-setter—MAULVI M. MAHFUZ-UL HAQ, M.A.

Examiner—MAULVI NASIR ALI KHAN, M.A.

COMPULSORY PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Translate into English :

24

کرے دشمنی کوئی تم سے اگر
 جہاں تک بنے تم کرو درگزر
 اگر تم سے ہو جائے سرزد قصور
 تو اقرار تو بہ کرو بالضرور
 بدی کی ہو جس نے تمہارے خلاف
 جو چاہے معافی تو کرو معاف
 بھلائی کرو تو کرو بے غرض
 غرض کی بھلائی تو ہے ایک مرض

جو محتاج مانگے تو دو تم ادھار
 رہو واپس کے نہ امیدوار
 جو تم کو خدا نے دیا ہے تو دو
 نہ خست کرو اس میں جو ہر سو دو

(b) ایک دین اُس لڑکے کی بڑی بہن توپی خریدنے نیوکاسل کو
 چلی۔ لڑکا ساٹھہ ہوا لیا۔ بہت جستجو کے بعد لڑکی کو ایک توپی پسند
 آئی۔ قیمت پوچھی تو دو آنے۔ پہلا اُس بیچاری کے پاس اتنے دام
 کہاں؟ ناچار اُسے بڑھی۔ پھر کہیں توپی نہیں پائی۔ پھر واپس آئی۔
 اُسی توپی کو تکنے لگی۔ دفعۃً جارج بولا ”بہن! ذرا یہیں تھہری رہنا“۔
 یہ کہہ چل دیا۔ راہ دیکھتے دیکھتے پورے چار گھنٹے ہو گئے۔ لڑکی
 بیچاری بہت گھبرائی *

11. Give an account of the life of *either* اہلیا بائی
 or سلطان جلال الدین خلجی -

5. *Either*, Give the meanings of -

5

حقیقی بھائی - بارگزار - عبادت الہی - تخت سلطنت - نیک بخت

Or, Fill in the blanks :-

ایک روز اس نیک بخت بی بی — سلطان — درخواست کی
 کہ ایک لڑکی باروچی خانہ — کام کرنے کو خرید لیجئے تو بہتر ہو۔
 سلطان نے جواب دیا ”شاہی خزانہ رعایا — مال ہے۔ اے بیگم! تو
 صبر — ساتھ اس مشقت کو برداشت کر“ *

4. Narrate the story of *either* سلطان فیروز اور بڑھیا
 or - ریلوے انجن کا موجد ”جارج اسٹیفنسن“

10

5. Correct the following :—

10

تمہاری نام کیا ہے ؟ تم کہاں جائیگا - ہم تم سے بات کرنا نہیں مانگتا -
میں آج پٹنہ جائینگے - میرا کتاب چربی ہو گیا *

6. (a) Give the genders of the following :—

5

دعا - دوات - جواب - دروا - زبان - ہاتھ - کان - ناک

(b) How is امر (imperative) formed in Urdu ?

Give examples.

4

(c) Give the plurals of

6

گھوڑا - گھڑی - بات - توبی - پیسہ - بی بی

7. Translate into Urdu :—

25

- (a) Ahmad is a good boy. He goes to school.
(b) Do you know Urdu ? Yes, I do.
(c) Will you have a cup of tea ? No, thanks.
(d) Please give me a glass of water. I am very thirsty.
(e) Akbar was a great king of India. He was brave and just.

ADDITIONAL PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English :—

10

سنہ ۱۸۱۲ عیسوی میں وہ انجن سازی کے کام پر مقرر ہوا - جب
تک متحرک انجن ایجاد نہیں ہوا تھا - اُس نے ایک چلتا ہوا انجن
بنا کر کھڑا کیا - جو ۱۵ جولائی سنہ ۱۸۱۴ عیسوی کو چلایا گیا - وہ پانچ سو
من کے آٹھ چھترے فی گھنٹہ چار میل کی رفتار سے لے جانے لگا - پھر
ایک اور انجن پہلے سے بھی بہتر بنایا - سب لوگ اُس کو حیرت کی نظر سے
دیکھتے اور کہتے کہ ایک نہ ایک دن وہ ضرور پھینگا *

2. Give an account of the life of *either* سلطان ناصر الدین شیر شاہ سوری

10

3. Translate into English :—

- 30

چترکرت کے پاس تھن گڑھ نام ایک گاؤں ہے ۔ رھن شان سنگھ اور گمان سنگھ دو بھائی رھتے تے ۔ ذات کے تھا کر تے ارز کھیتی کرتے تے ۔ بھینس پال رکھی تھی ۔ گھی بیچتے تے ارز دھي کھاتے تے ۔ اُن کی ایک بہن تھی ۔ دراجی نام تھا ۔ تینوں ابھی تک کدواڑے تے ۔ برے بھائی کا خیال تھا کہ پلے چھوٹے بھائی کی شادی ہو جائے ارز چھوٹا سوچتا کہ پلے برے بھائی کا بیاہ ہو جائے ۔ اسی خیال میں زمانہ گزر گیا ۔ باب ماں زندہ روتے تو بیاہ کر دیتے ۔ زمانہ رھا کہ دونوں مر چکے تے *

4. (a) Fill up the blanks :—

5

میں — اُس سے دو روپے لئے ۔ وہ مجھے — خفا ہے ۔ اُس — منہ میں دانت نہیں ہیں ۔ احمد — اُنکے برید ہے ۔ یہ قلم محمود — ہے *

(b) Correct the following : --

12

ہمارا بلی بہت اچھا ہے ۔ آپ ممکن کب جاؤ گے ۔ ہم نہیں جانتا ہے ۔ تم کیا مانگتا ہے ۔ ہانہی بہت بری جانور ہے *

5. Translate into Urdu :—

35

Shahjahan had four sons. The eldest, Dara Shikoh, was chosen by him as his successor. He was a learned prince. Shuja, the second son, was appointed governor of Bihar and Orissa. The ablest of all was the third son Aurangzeb. Murad, who governed Gujarat, was a brave general.

BENGALI (FOR MALE CANDIDATES).

COMPULSORY PAPER.

Paper-setters— { MR. SYAMAPRASAD MOOKERJEE, M.A., B.L.,
Barrister-at-Law, M.L.C.
,, MANMATHAMOHAN BASU, M.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English one passage from each of the following groups :— 24.

Group A.

(a) ১৭৫৭ শকে দিদিমার যখন মৃত্যুকাল উপস্থিত, তখন আমার পিতা এলাহাবাদ অঞ্চলে ভ্রমণ করিতে গিয়াছিলেন। বৈষ্ণব আসিয়া কহিল, রোগীকে আর গৃহে রাখা হইবে না। অতএব সকলে আমার পিতামহীকে গঙ্গাতীরে লইয়া যাইবার জন্ত বাড়ীর বাহিরে আনিল। কিন্তু দিদিমা আরও বাঁচিতে চান, গঙ্গায় যাইতে তাঁহার মত নাই। তিনি বলিলেন, “যদি দ্বারকানাথ বাড়ীতে থাকিত তবে তোরা কখনই আমাকে লইয়া যাইতে পারতিস্ নে।” কিন্তু লোকে তাহা শুনি ন।

(b) প্রতিভা এমনি জিনিষ, ইহা যাহা কিছু স্পর্শ করে, তাহাকেই সজীব করে। বঙ্কিমের প্রতিভা সেইরূপ ছিল। তিনি মাসিক পত্রিকার সম্পাদক হইতে গিয়া একরূপ মাসিক পত্রিকার সৃষ্টি করিলেন, যাহা প্রকাশমাত্র বাঙ্গালীর ঘরে ঘরে স্থান পাইল। তাহার সকলই যেন চিত্তাকর্ষক, সকলই যেন মিষ্ট। বঙ্গদর্শন দেখিতে দেখিতে উদীয়মান সূর্যের ন্যায় লোকচক্ষুর সমক্ষে উঠিয়া পড়িল।

Group B.

(a) হে ভারত, আজি নবীন বর্ষে

শুন এ কবির গান।—

তোমার চরণে নবীন বর্ষে

এনেছি পূজার দান।

এনেছি মোদের দেহের শক্তি,

এনেছি মোদের প্রাণের ভক্তি,

এনেছি মোদের ধর্মের মতি,
 এনেছি মোদের প্রাণ !
 এনেছি মোদের শ্রেষ্ঠ অর্ঘ্য
 তোমা'রে করিতে দান ।

- (৮) আমি তো তোমা'রে চাহিনি জীবনে,
 তুমি অভাগারে চেয়েছ ;
 আমি না ডাকিতে, হৃদয়-মাঝারে
 নিজে এসে দেখা দিয়েছ ।
 চির-আদরের বিনিময়ে, সখা,
 চির-অবহেলা পেয়েছ ;
 (আমি) দূরে ছুটে যেতে, হৃ'হাত পসারি,
 ধ'রে টেনে কোলে নিয়েছ ।

2. Explain one passage from each of the following groups :

Group A.

- (a) নিরাশা, বেদনা, দুঃখ, অশ্রু লয়ে
 পুরাণ বরষ গিয়াছে যাক্,
 দ্বাদশ মাসের বিষাদের দাগ
 উহারি বুকেতে লুকান থাক্ !
 কৃপা-হস্ত কার, অশ্রুট আলোকে
 দেখিতেছি, আছে জড়ায়ে সবে,
 অই হাত ধ'রে উঠি প'ড়ে প'ড়ে
 কেন আর ভয় পাইগো তবে !

- (b) কীর্ত্তিনাশা মানবের ভীষণ শিক্ষক ।
 ইষ্টক উপরে করি ইষ্টক স্থাপন,
 লভিবারে অমরতা বাসনা যাহার,—
 লিখিতে বাসনা যার রজতের ধারে
 কালগর্ভে অমরতা, আসি' একবার

রাজবল্লভের এই কীর্তির আশানে,
দেখুক তোমার নীরে শুদ্ধিত নয়নে,
তাহার অদৃষ্টলিপি ; ভাবী সমাচার
তব মূঢ় কলকলে শুদ্ধক শ্রবণে ।

Group B.

(a) বাল্যাবস্থার পূর্বেই অনেকের জিঘাংসা-প্রবৃত্তি অতি বলবতী হইয়া উঠে, এবং এই বয়সে জীবনী-শক্তির আধিক্যকেই ইহার মুখ্য কারণ বলিতে হইবে। এ সময়ে বিপদকে বিপদ বলিয়া বোধ হয় না, সাহসের পরিসীমা থাকে না ও কি মনুষ্য, কি ইতর জন্তু—কাহারও সহিত ব্যবহারে সন্দেহের লেশমাত্র উদয় হয় না। এরূপ স্বভাব একপক্ষে বাঞ্ছনীয়, কিন্তু অন্যান্য বৃত্তির অধীন হইয়া না চলিলে, পরে ইহা দ্বারা বিশেষ অনিষ্ট হইতে পারে।

(b) মহত্ত্ব যদি পর্ণকুটীরে লতাপাতার আচ্ছাদনে পড়িয়া থাকে, সেই পর্ণকুটীর স্বর্ণপ্রাসাদ হইতে স্বন্দর দেখায় ; মহত্ত্ব যদি অসংখ্য গ্রন্থিযুক্ত জীর্ণাশ্বেরে পরিহিত রহে, ইন্দ্রের ইন্দ্রত্বও সেখানে লজ্জায় নিস্ত্রভ হয়। বাহিরের শোভা ও বাহিরের স্বচিক্ণ কারুকার্য ক্ষুদ্রতারই উপযুক্ত আবরণ। মহত্ত্বের স্বাভাবিক সৌন্দর্য কোনরূপ কৃত্রিম সহায়তার অপেক্ষা রাখে না।

3. *Either*, What, in the opinion of Bankimchandra Chatterjee, are the best ways of educating the masses ? What, according to him, has retarded the progress of mass education in Bengal ? 10

Or, Relate some incidents to illustrate the kind-heartedness and independent spirit of Sir Asutosh. 10

4. (a) Distinguish between *Sandhi* and *Samasa*, giving an example of each. 3

(b) Join by the rules of *Sandhi* any three of the following :— 3

গন্ধা+উদক, পিতৃ+আলয়, বিপদ+জাল, অধঃ+গমন, অতঃ+এব,
দিক্+মণ্ডল ।

(c) Expound the *samasas* in any three of the following words :—5

পরমেশ্বর, মহাশয়, পিতৃভক্তি, দিব্যরাত্রি, টান্ধম্খ, ভাকগাড়ী ।

5. (a) Give the feminine forms of any three of the following :—

বিদ্বান, মাতুল, কর্তা, স্বপ্নর, সাধু, ঠাকুর ।

(b) Form adjectives from any three of the following nouns :—

পূজা, মায়া, ক্ষুধা, পক্ষ, রেশম, লোক ।

Q. (a) Turn *either* of the following into Passive Voice :—

(i) তাঁহার পিতা আমাকে আহ্বান করিয়াছেন।

(ii) মহর্ষি বাণ্যকি রামায়ণ রচনা করিয়াছেন।

(b) Correct :—

আলস্য ব্যক্তি কখন শুখি হয় না। পরিশ্রমই শৌভাগ্যতার জনক। সেই জন্ত হরিচরণ এক মুহূর্ত্ত সময়ও ত্রিখা নষ্ট করে না। কিন্তু সেই শংগে শাস্ত্রের প্রতিও সে বিশেষ দৃষ্টি রাখে। যখন বিস্ময় করা দরকার মনে করে তখন সে বিস্ময় করে।

7. Translate into Bengali *either* of the following passages :

25

(a) There once lived a fisherman and his wife. They had no house to live in. They lived in the fields, and they slept at the foot of a tree. The man was happy. But the wife was never happy. She said, 'Why did I marry a poor fisherman? We have no house but the fields, no bed but the dust, no food but fish.' But the man said, 'Why do men live in houses? Why do they sleep on beds? There is no bed better than a field.'

(b) Night was coming on. There was a light in the window of a house. Dick went to it and stood near the door; then he sat down on the stone. Just then the door opened and a servant looked out; she saw Dick sitting there. 'Go away, you good-for-nothing boy!' she cried. 'What are you doing there?' Dick was so cold that he could not even stand up. The servant was angry. 'Go away!' she cried again.

BENGALI (FOR FEMALE CANDIDATES)

COMPULSORY PAPER

<i>Paper-setters—</i>	{ SRIMATI BANGABALA MUKHERJEE, B.A., B.T. MR. SYAMAPRASAD MOOKERJEE, M.A., B.L., Barrister-at-Law, M.L.C.
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Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate *either* of the following passages into English :—

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(a) কর্মই ধর্ম—ইহা ডেভিড হোয়ারের জীবনের মূলমন্ত্র ছিল। তাই তিনি আত্ম-বিস্মৃত হইয়া পরসেবায় সমস্ত ধন, মন ও প্রাণ অর্পণ করিয়াছিলেন।

বিজ্ঞার্থী কত নিঃস্ব বালককে তিনি অর্থদ্বারা সাহায্য করিয়াছেন, কত অভাব-গ্রস্ত বালককে তিনি নিজব্যয়ে পুস্তক সংগ্রহ করিয়া দিয়াছেন, কত দরিদ্র বালকের গ্রাসাচ্ছাদনের ব্যয় তিনি নিজে বহন করিয়াছেন, কত দরিদ্র ছাত্রের রোগ শয্যাপার্শ্বে উপবেশন করিয়া তিনি নিজহস্তে ঔষধ ও পথ্য প্রদান করিয়াছেন, কত দুঃস্থ পরিবারের শিক্ষিত যুবককে চাকুরীর সংস্থান করিয়া দিয়া দারিদ্র্যের নিশ্চয় নিষ্পেষণ হইতে রক্ষা করিয়াছেন, তাহার ইয়ত্তা করা কঠিন।

(b) এখানকার কর্মপ্রণালী অত্যন্ত কারখানা হইতে অনেক স্বতন্ত্র। কারবারের স্তম্ভ খরচা বাদে মোট যে লাভ হয়, তাহা হইতে শতকরা পঁচিশ অংশ বৃদ্ধি অনুসারে এবং পঁচাত্তর অংশ পরিশ্রম অনুসারে কর্মচারীদের মধ্যে বণ্টন করিয়া দেওয়া হয়। ইহা ব্যতীত তাহাদের যথানিয়মিত বেতন আছে। ত্রিশ বৎসর কাজের পর পেনশন্ নির্দিষ্ট হয়, কিন্তু বিশেষ কারণে অক্ষম হইয়া পড়িলে পনেরো বৎসরের পরেই একটা মাসহারার অধিকারী হওয়া যায়। দুঃখহৃদ্বিনের জন্য একটা বিশেষ বন্দোবস্ত আছে, এবং সভাভুক্ত যে কেহ ইচ্ছা করিলে সম্মানদীর্ঘকে চৌদ্দ বৎসর বয়স পর্য্যন্ত সরকারী ব্যয়ে বিজ্ঞাশিক্ষা দিতে পারে।

2. Explain with reference to the context :—

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(a) *Either*, অতিথি-সেবায় তুমি বিরত কি আজি,

জানকি ? রঘুর বংশে চাহ কি ঢালিতে

এ কলঙ্ক-কালি, তুমি রঘু-বধু ? কহ,

কি গৌরবে অবহেলা কর ব্রহ্মা শাপে।

দেহ ভিক্ষা ; শাপ দিয়া নহে যাই চলি'।

Or,

কারে ভয় করিস্ জানকি ?

সাজিছে স্ত্রীবি রাজা উদ্ধারিতে তোরে,

মিত্রবর। বধিল যে শূরে তোর স্বামী

বালি নাম ধরে রাজা বিখ্যাত জগতে।

কিঙ্কিঙ্ক্য নগর ওই। ইন্দ্র-তুলা বলি-

বৃন্দ চেয়ে দেখ্ সাজে।

(b) *Either*, আর কিছু বলি তন, দেবদেব পকানন,
 সতীকথা অর্ধ অজ যার ।
 সতীগতে কুন্তিবাস, দক্ষযজ্ঞ করি নাণ,
 ছাগমুখ দক্ষের আকার ॥
 সতীদেহ ত্যাগ করে, জগ্নি হিমালয়ঘরে,
 সর্ব হেতু মম মায়াজাল ।
 আমারে হেলন করি, ইন্দ্র স্বর্গ পরিহরি
 ভগাঙ্গ রহিল কত কাল ॥

Or, দেশে যাহ নরবর, একচ্ছত্রে রাজ্যেশ্বর,
 হবে দশ হাজার বৎসর ।
 পুত্র পাবে শত জন, কণ্ঠারত্ন মহাধন,
 অস্ত্রে বাস বৈকুণ্ঠনগর ॥
 মম সহ করি বাদ, হৈল তব এ প্রমাদ
 পৃথিবীতে রহিল ঘোষণ ।
 যে তোমার নাম লবে, তার মনোবাথা যাবে
 শুন ওহে শ্রীবৎস রাজন ॥

2. Attempt any one of the following :—

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(a) How does Vyas answer the argument of his disciple that the battle of “কুরুক্ষেত্র” as an instance of “হত্যাকাণ্ড” is “অর্থহীন” ।

(b) “এই বিদুষী রমণীর প্রাণপাত চেষ্টা ও যত্নের ফলে আজ পৃথিবী শিশুর শিক্ষাবিষয়ে এক নতুন তত্ত্ব লাভ করিয়াছে ।”

Who is the learned lady referred to in the above quotation from your text ? State what you know about her life and work.

(c) What is Rabindranath's conception of “মহুয়াঙ্গ” and how can it be attained ?

(d) How should a good housewife, according to the author of “গৃহশ্রী”, treat her servants ?

4. Correct the errors in the following :—

কল্প শয্যায় স্বাস্থ্যনা দিতে মাতাতুল্য আর কে আছে? অনেক বন্ধু-সমূহ লাভের আশায় স্বকালে ঘরের আসে পাসে পাহারা দেয়, কিন্তু সয্যাসায়ি হইলে তাহার। দুরে হইতে দীর্ঘনিশ্বাস ফেলিয়াই কান্ত হয়; কিন্তু সন্তানের শারিরিক কষ্টে গর্ভধারিণির অন্তরে যে বেদনা হয় সে বেদনা কথায় প্রকাশ করা যায় না। বস্তুত গর্ভধারিণির করুণা জগৎধাত্রির করুণারই প্রতিক।

5. Combine the following sentences into a single one :—

ভক্ত প্রহ্লাদ ভক্তির অবতার স্বরূপ ছিলেন। তিনি দশ বৎসর বয়সে কৃষ্ণ ভক্তি পরায়ণ হইয়াছিলেন। তাঁহার পিতা তাহাকে বহুবিধ নিষ্ঠুর দণ্ড প্রদান করিয়াছিলেন। তাহাতেও তিনি যে কৃষ্ণ ভবের দুঃখ হরণ করেন, যে কৃষ্ণ বিপদ ভঞ্জন করেন, সেই কৃষ্ণের নাম পরিত্যাগ করেন নাই। তাঁহার পিতার নাম হিরণ্যকশিপু। কৃষ্ণনামে তাঁহার বিশেষ ছিল।

6. (a) Form sentences with any four of the following group of words so as to distinguish the differences of meanings :—

নব, নব্য; প্রসাদ, প্রাসাদ; ইহা, ঈহা; আবরণ, আভরণ; সঙ্গ, সম্ব; দীপ্ত, দৃপ্ত;

(b) Substitute single words for the following :—

একই সকে আবির্ভূত। এ পর্য্যন্ত যাহার শত্রু হয় নাই। যাহা বিশ্বাস করা যায় না। যাহা না ঘটয়া থাকিতে পারে না। যে পনের মুখ চাহিয়া থাকে।

(c) Form adjectives from nouns and nouns from adjectives from five among the following words and construct short sentences to illustrate their meaning :—

বচন, বিচিত্র, বায়ু, বিধান, ধোয়, আসন।

7. Translate either of the following extracts :—

(a) আশুতোষ অতিশয় অমায়িক ও সরল প্রকৃতির লোক ছিলেন। তিনি ছোট বড়, ধনী দরিদ্র, মুর্থ বিদ্বান্ সকল লোককেই প্রীতির চক্ষে দেখিতেন। সাধারণ লোকের সহিত কথা বলিতে তিনি কোন দিন কুঠাবোধ করিতেন না। যে কোন লোক যখনই তাঁহার সহিত সাক্ষাৎ করিতে আসিয়াছেন, সংবাদ পাইলেই তিনি তাড়াতাড়ি আসিয়া তাহার সহিত হস্ত মুখে আলাপ করিতেন। তিনি অতিশয় যাতৃভক্ত ছিলেন। জননী তাঁহাকে যখন যাহা বলিতেন, তিনি অগ্নানবদনে তৎক্ষণাৎ তাহাই করিতেন।

(৬) সন্ধ্যাসী বলিলেন “ব্যাধ, তুমি এক্ষণ নিৰ্বোধের ভাষ্য কর্তব্য করিতেছ কেন? পক্ষী ও জালের মায়া ভাগ করিয়া ফিরিয়া যাও। অনর্থক কষ্ট করিয়া লাভ কি?” ব্যাধ উত্তর করিল, “প্রভু! এই পাখীগুলি যতক্ষণ একত্র হইয়া একমনে উড়িতে থাকিবে, ততক্ষণ আমার কোন আশাই নাই। কিন্তু উহাদের মধ্যে বিরোধ উপস্থিত হইলে আমি ঐ জাল সমেত পাখীগুলি অতি সহজেই লাভ করিতে পারিব। তাহারা আর অধিকক্ষণ একতা রক্ষা করিতে পারিবে না—এই ভরসায় তাহাদের প্রতি লক্ষ্য রাখিয়া ছুটিয়া চলিয়াছি।”

ASSAMESE (FOR MALE CANDIDATES)

COMPULSORY PAPER

Paper-setters— { Mr. AMBIKANATH BORAH, M.A.
 { SRIMATI SUKHALATA DAS, M.A., B.T.

Examiner—MR. BANIKANTA KAKATI, M.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English any two of the following :— 25

(a) গুৱাহাটীৰ বৰফুকনে গুৱাহাটীতে মানে সৈতে এটা ৰণ দিছিল : তেওঁ মানে সৈতে ৰণ দিয়াৰ আগেয়ে কামৰূপীয়া বৰুৱাবিলাকলৈ সৈন্ত সামন্ত খুঞ্জি মানুহ পঠাইছিল। কিন্তু সেই সময়ত এঠাইৰ পৰা আন এঠাইলৈ যাবলৈ স্তম্ভ নাছিল, সেই দেখি বৰ ফুকনৰ মানুহবিলাকে গৈ বৰুৱাবিলাকক জাননী দিবলৈ নো পাওঁতেই ইফালে মান আহি গুৱাহাটী পালে। বৰফুকন আক চম্ৰকান্তৰজা দুইও আন একো উপায় নেপায় তেওঁলোকৰ লগত অলপ যি সৈন্ত সামন্ত আছিল তাৰেই এটা ৰণ কৰিলে। কিন্তু মানৰ সৰহ সৈন্তৰ আগত ঠাৱৰিব নোৱাৰি যুদ্ধত হাবিল।

(b) কোচবিহাৰ নবনাবায়ণ ৰজা বৰ বিক্ৰমশালী আৰু ধান্মিক আছিল। অসমৰ বৈষ্ণৱ সম্প্ৰদায়ৰ সকলোবিলাক মহাপুৰুষেই তেওঁৰ সভাত আদৰ পাইছিল আৰু তেওঁৰ আশ্ৰয় লভিছিল। তেওঁৰ সভাত সকলো জাতৰে

অসমীয়া মাহুহ আছিল আৰু ভালেমান অসমীয়া মাহুহৰ তেওঁ আশ্ৰয়দাতা
আৰু অন্নদাতা আছিল। দুখৰ বিষয় আজিকালি তেওঁৰ বাহ্যত তেওঁৰ
বংশধৰৰ ওচৰত অসমীয়া মাহুহে আশ্ৰয় পোৱা নাই।

(c) প্ৰসিদ্ধ চতুৰ চাই দুত পাঞ্চিলন্ত।

পৰ্য্যটিল দুতগণ পৃথিবীৰ অন্ত ॥

কহিলেক কথা গৈয়া সকল ৰাজ্যত।

মাধৱ গোসাঁইৰ বিহা হৈবে দ্বাৰকাত ॥

চলিয়োক বিহা চাহিবাক বাহা যাব।

যাইবো বুলি ৰাজাগণ ভৈল কাচপাৰ ॥

যৌতুক দিবাক লাগি লৈলা বহুধন।

হীৰা মৰকত বত্ন মাণিক ভূষণ ॥

ৰথ ধ্বজ গজ বাজী সাজি নিবন্তৰ।

লক্ষ লক্ষ ৰাজা চলে দ্বাৰকা নগৰ ॥

জৰাসন্ধ প্ৰমুখ্যে বিপক্ষ ৰাজা যত।

বিহা চাহিবাক গৈলা সবাৰে সন্মত ॥

অনেক যৌতুক বত্ন লৈয়া সামৰাজে।

দ্বাৰকাক গৈলা সবে শিশুপাল ৰাজে ॥

2. *Either*, Describe the battle of হৰিবি। চকি

14

Or, Give the reasons for the enmity between চণ্ডীবকৰা
and হলকান্তবকৰা।

3. Describe the journey of Sreekrishna from Daraka to
Kundin.

41

4. Explain :—

18

(a) জাতিলোকে বোলে প্ৰভু আৰু কিবা শুধি।

সাধু সাধু ৰাজা ধন্ত সম্প্ৰজিলা বুদ্ধি ॥

মাধৱত পৰে ত্ৰিজগতে নাহি আন।

পুৰুষ উদ্ধাৰ হোঁক ৰবা কন্তাদান ॥

(b) তেওঁ এমাডিমা লৰা

কৰে ডেকা তেজ-ধৰা,

অহকাৰ বচাবলৈ মাক-বাপেকৰ।

(c) কিন্তু হয় ! এই দখ অতি ভয়ানক ।

একো কথা নোশোধাকৈ শুক—“বিবেকক”

নকবিবী ইকালত প্ৰাণ যায়ো যক ।

5. Decline the pronoun তুমি in all cases in both the numbers. 10

6. Give the feminine forms of বান্দৰ, মোমাই, কচাৰী and the masculine forms of বাই, গাই, কালৰী । 9

7. Give the substance of the following passage (unseen) :—

আতনবাঁহ গড়ীয়া বুয়া গোহাঁই ডাঙৰীয়া জয়ধ্বজসিংহৰ দিনৰে পৰা চুলিৰ্কা লৰাৰজাৰ ৰাজত্বৰ আগলৈকে ৰাজমন্ত্ৰীৰ বাব খাইছিল । মোগলৰ পৰা গুৱাহাটী উদ্ধাব, শৰাইঘাটৰ যুদ্ধত ৰজা ৰামসিংহৰ পৰাজয় আৰু অসমীয়াৰ বিজয় কাৰ্য্যত তেওঁৰ কাৰ্য্যকুশলতা, বুদ্ধি পৰামৰ্শ আৰু ৰণ চাতুৰ্য্য বিশেষ লেখত লবলগীয়া । চক্ৰধ্বজ সিংহৰ মৃত্যুৰ পাছৰ পৰা ৰজা ভঙাপতা বিপ্লৱত তেওঁ ৰাজ্যৰ ধৰণী হৈ পতনোন্মুখ ৰাজ্যক স্বেচ্ছল আৰু স্বদৃঢ় কৰিবলৈ চেষ্টা কৰিছিল । কিন্তু পাছলৈ তেওঁৰ প্ৰধান অন্তৰায় আৰু শত্ৰু হৈছিল লাচিত বৰ ফুকনৰ ককায়েক লালুক সোলা বৰফুকন । “দেবৰো দুৰ্গম বিশ্বকৰ্ম্মা নিৰ্ম্মিত গুৱাহাটী গড়” চুলতান অজমতৰাৰ সেনাপতি মঞ্জুৰখাঁক বিনা যুদ্ধে সমৰ্পণ কৰি লালুক বৰফুকনে অসমৰ ৰজা বোলাবলৈ চেষ্টা কৰে । 10

ASSAMESE (FOR FEMALE CANDIDATES)

COMPULSORY PAPER

Paper-setters— { MR. BANIKANTA KAKATI, M.A.
SRIMATI SUKHALATA DAS, M.A., B.T.

Examiner—MR. ATAUR RAHAMAN, M.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate the following passages into English :—

20

(a) আনন্দৰাম সকৰে পৰা বৰ তীক্ষ্ণবুদ্ধিৰ লৰা আছিল । তেওঁৰ পিতাকে প্ৰথমে সংস্কৃত পঢ়িবলৈ দিয়ে । আৰু অলপ কালৰ ভিতৰতে তেওঁ সংস্কৃত শিক্ষাত পাৰ্গতালি দেখাব পাৰিছিল । -

(b) চৰিত্ৰ মানবজীৱনৰ সৰ্বাতো কৈ ভাল গুণ। আদৰ্শ চৰিত্ৰবান
পুৰুষেই সমাজৰ প্ৰকৃত চালক আৰু ৰাজ্যৰ ধৰনী শক্তি স্বৰূপ। কিয়নো
যথার্থতে নৈতিক বলেহে গোটেই পৃথিবীক শাসন কৰিছে।

2. *Either*, Tell the story of Anandaram Phukan's life and mention the good things he did for his country. 15

Or, Describe the anecdote between Alexander and Diogenes and point out the moral.

3. *Either*, What good services did Hema Chandra Barua do for the Assamese language. 15

Or, Give the substance of any poem you like best in *Anjali*.

4. Give the sense of *two* of the following passages and indicate the context :— 15

(a) তুমি মোৰ পূৰ্ণ আশা নীল গগনত;
তুমি মোৰ জীৱনি-ছেউতি,
মাজে মাজে একো বেলি দেখা দিবা মোক,
দিবা দেই কৰিছোঁ কাকুতি।

(b) পৰ্বতৰ পানী ধাৰ প্ৰাণ কৰা জুৰ,
সদাশিৱে মূৰ পাতি ল'লে,
জীৱন শীতল হব তুমি আহি মোৰ
অস্তৰত অবস্থিতি হ'লে।

(c) উচিত সৌমাৰ ইপাৰ বা সিপাৰ হ'লে সকলো শক্তিয়ে অনিষ্ট ঘটে

5. Correct any *three* of the following :— 9

(a) মাহুহ ভাতক খায়।

(b) বাৰিষা বহুত হৰিণাই মৰে।

(c) গৰু দাঁতে ঘাহ চোবায়।

(d) মাকে লৰা একোবালে।

6. Join in *sandhi* any *three* of the following :—অতি+
উচ্চ; উৎ+নতি; এক+এক; হিত+অহিত। 6

7. Translate the following passages into Assamese :— 20

(a) I managed with great difficulty to swim to the shore. I was so beaten about by the great waves that when I reached the shore, I was so tired that I lay down on the grass and fell fast asleep.

(b) Sohrab rode towards the tent of the king and challenged him to come out and fight. But there was no answer. The king remained silent in fear in his tent and sent off a swift messenger to call for immediate help.

HINDI TEXT (FOR FEMALE CANDIDATES)

COMPULSORY PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate three of the following extracts into English :— 15
one from Group A and two from Group B :—

GROUP A

- (i) हमकी हरि कौ कथा सुनाउ ।
वै अपनी ग्यान गाथा बलि, मेथुरा ही ले जाउ ॥
वै नर नारिन के समुझहिंगी, तेरी बचन बनाउ ।
पा लागी ऐसी इन बातनि, उनहीं जाइ रिभाउ ॥
जौ सुचि सखा खामसुंदर की, अरु जिय बति सतिभाउ ।
तौ बारक आतुर इन नैननि, वह मुख आनि दिखाउ ॥
जौ कोउ कोटि करै कैसीह, विधि विद्या व्यवसाउ ।
तौ सुन सूर मीन की जल बिन, नाहिन और उपाउ ॥

- (ii) कबहुँ होत सतचंद कबहुँ प्रगटत दुरि भाजत ।
पवन गगन बस बिंब रूप जन मै बहु साजत ॥
मनु ससि भरि अनुराग जमुन जल लोटत डोलै ।
कै तरंग की डोर हिंडोरन करत कलीलै ॥

GROUP B

(iii) इनकी निवृत्ति-परायणता और राजपुत्रों की प्रवृत्ति-परायणता देखकर यह स्पष्ट हो जाता है कि उस समय एक तरफ़ निवृत्ति-मार्ग की पराकाष्ठा थी, तो दूसरी तरफ़ प्रवृत्ति-मार्ग की। निवृत्ति-मार्ग के लोग संसार की माया समझकर वनवास और संन्यास की ही परम पुरुषार्थ समझते थे, और प्रवृत्ति-मार्ग के लोग सांसारिक उपभोग के परे कुछ देखते ही न थे।

(iv) इस विचार के उठते ही उनके मुख पर सीलहों कलाशों से पूर्ण आनंद-रूपी इंदु का उदय हुआ ; किंतु तत्काल ही पुत्रीवृत्ति से उत्पन्न राग ने उनके वैराग्य से उत्पन्न आनंद पर आक्रमण किया और उनका सारा मानसिक सुख अंतर्धान हो गया ।

(v) रात्रि में कमसाल ने सिपाहियों की आश्वसन दे उनका ध्यान उस परिस्थिति की ओर खींचा जो मुगलों के पुनरुद्भव की अवस्था में उनकी होगी, यवनों के अत्याचार की श्रुति दिलाई और धर्म-युद्ध के अन्त्य लाभ की ओर उनका चित्त आकर्षित किया ।

2. (a) Comment grammatically on *four* of the underlined words in Question I. 4

(b) Write sentences using *five* of the following expressions :—
आपा से बाहर हो जाना ; मुख में कारिख पीतना ; पानी फेर देना ; चकमे में आना ; नई रुह फूँक देना ; बीड़ा उठाना ; सिद्धा जमाना ; छापा मारना . 5

(c) Explain fully *five* of the following words :— 5
विविध-ताप, समावर्तन-संस्कार, धर्मचक्रप्रवर्तन, आष्टांगिक-मार्ग, दार्शनिक, राज्य-क्रान्ति, एक-रस, माध्वी, संस्कृति, गौल्लिक ।

3. (a) What was the extent of Samudra Gupta's dominions ? What extension did it undergo during the time of Chandra Gupta II ? 8

(b) Give an estimate of Akbar's character. 6

(c) Where were the following and for what were they noted ?
—वैशाली, सारनाथ, कुशीनगर, पुरुषपुर, and वत्स । 5

4. (a) Write sentences to illustrate the difference in usage between न, नहीं, and मत । 12

(b) Re-write the following correctly :— 13

राय साहब रास्ता से जा रहे थे । एक घर से धुँआ नहीं निकलते देख के एक सिपाही को कहें, “देखी तो क्या बात है ?” सिपाही वह घर के पास जाके आवाज़ दिया । एक बुढ़िया निकल आया । राय साहब उसकी पूछें, “आज क्या तुम्हारा घर में चूल्हा नहीं जला ?” बुढ़िया ने कही, “खाने की कुछ है ही नहीं तो चूल्हा काहें वास्ते जलैगा ?”

5. Translate into English :— 25

प्राचीन समय के मिथ-देश-वासी भी हिन्दुओं के समान पुनर्जन्म की मानते थे, और उनका यह विश्वास था कि मरने के वशुद जो जी वसुणुँ इस लीक में अपने आत्मीयों द्वारा दी जाती हैं वे उसे पितृलीक में भी मिलती हैं । इसी कारण समष्टि समाप्ती अथवा किसी अन्य प्रतिष्ठित पुरुष की मृत्यु के पश्चात्, चारपाई, भोजन, कपड़े, वस्त्र तथा जीवन की समस्त आवश्यक वस्तुएँ, यहाँ तक कि घोड़े और दास-दासियाँ भी लाश के साथ दफन कर दिये जाते थे । इस लिये हम इन पिरामिडों की मिथ देशके बादशाहों की विशाल कब्रें कह सकते हैं ।

URDŪ (FOR FEMALE CANDIDATES) COMPULSORY PAPER

Paper-setter—KHAN BAHADUR REZA ALI WAHSHAT.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. *Either*, Write an account of Sher Shāh Sūrī. 20
Or, Describe the private life of Sultān Nāṣir-ud-Dīn.
2. Explain any five of the following phrases :— 10

(a) میں کہاں اور تخت شاہی کہاں *

(b) تخت شاہی پر جلوہ افروز ہوا *

(c) وہ لوگ اپنے کردار سے بہت نادم اور منفعّل ہوئے *

(d) فسر انجام اُسے مطلق نہیں *

(e) اِس بادشاہ کو ایجاد قوانین کا بڑا ملکہ تھا *

(f) راجپوتانہ کی فوج نے تیر اندازی میں دستگاہِ کامل پیدا کی تھی *

(g) زمیں نے شق ہو کر سیتاجی کو اپنی آغوش میں لے لیا *

(h) تو صبر کے ساتھ اِس مشقت کو برداشت کر *

3. Give the gender of any five of the following words :— 5

انی - شراب - شربت - شکل - پھول - قلم - کاغذ - کتاب

4. Translate into English any two of the following extracts :— 20

(a) بڑا بھائی نہایت قانع اور دور اندیش آدمی تھا - اُس نے تمام

نشیب و فراز سمجھا کر کہا کہ ”اِس ارادے میں کامیابی کی توقع بہت کم ہے“ - لیکن چھوٹے بھائی پر جب اپنی نصیحت کا کچھ اثر نہ دیکھا تو

ناچار اُسکی رفاقت پر آمادہ ہو گیا اور کہا کہ ”میں تمہاری دولت میں شرکت نہیں چاہتا - مجھکو صرف اتنی اجازت دو کہ کچھ آلات و اسباب اور میرے

چند نوکر ساتھ چلیں“ *

(h) جب جارچ چودہ برس کا ہوا تو اپنا آبائی پیشہ اختیار کیا یعنی کان کے اندر کوئلہ کھودنے لگا جسکی مزدوری آٹھ آنے فی یوم تھی۔ شراب خواری اور کھیل تماشوں سے اُت سخت نفرت تھی۔ ابھی تک وہ محض ناخواندہ تھا مگر علم و فن کا ایسا شائق کہ اپنے مسکن سے چار میل کے فاصلے پر ایک بڑے میاں کے پاس حساب سیکھنے جاتا *

(i) اِس سخت امتحان میں کامیاب ہونے کے بعد رامچندر جی، سینتاجی کو ہمراہ لیکر بڑی دھوم دھام سے اجودھیا میں داخل ہوئے اور تخت شاہی نے رامچندر جی کے جلوس سے رونق تازہ پائی۔ سینتاجی نے جبلی نیک مزاجی، خوش خوئی اور نہایت خلوص و وفاداری سے اپنے ناصر شہر کے دل میں ازدیاد محبت کا بیج بویا *

5. Re-write correctly the following sentences :—

20

- (۱) ہم نے ایک بات تم سے کہا تھا (۲) تم کب کھانا کھائے
- (۳) تمہارا گھر میں کتنے آدمی ہیں (۴) وہ چار لڑکے کو بلاؤ
- (۵) یہ کتاب میں کیا لکھا ہے (۶) یہ لوگوں کو کچھ عقل نہیں ہے
- (۷) تم نے کیا کیا باتیں سنا (۸) تمہاری کتاب لیجار
- (۹) یہ دو عورت کہاں رھتی ہیں (۱۰) وہ کالے گھوڑے پر کون سوار ہے *

6. Translate into Urdu :—

25

Will you come to the bazaar with me ? I am going to buy some sweets. I will give you some.

Oh, yes, I will come. How much money have you got to buy sweets with ?

I have four annas.

Oh, you are rich ! Where did you get so much money ?

You know the goldsmith's son, who comes to our school. I sold him my paper kite for four annas.

Four annas for a paper kite ! Why, you cannot have paid more than half an anna for it !

KHASI (FOR FEMALE CANDIDATES)

COMPULSORY PAPER

Paper-setter—MR. OWEN ROWIE, M.A., B.T.

Examiner—MR. ROY ROWLAND THOMAS, M.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Iathuh kumno ka jinglalot khlem-pyrkhat u khar Tili ka la pynpaw bieit pynban ia u. 15

2. Explain any *two* of the following, in Khasi, with reference to the context:— 15

(a) Ngi iohi ia u Thngiat kiwei hynrei ngim iohi ia la u Khung.

(b) Kordit ia ki khun kiba haram ia la ki kmie-ki kpa.

(c) Uba bet ia ka Lyer u'n ioh ot da ka Erlangthari.

3. Bring out *either* the meaning *or* the picture contained in any *two* of the following stanzas in Khasi:— 15 + 15

(a) Kiwei ha u Marble, ka Ksiar, ne u Nar,
Kiwei da ka Sia ha ka Thoh ha ka Tar,
Ki sei la ka bor kaba tang shiphang sngi:
Te ki leit sha Eire sha kawei pat ka ri.

(b) Wat tieng te la dei ba'n tur
Na ka ding ne na ka snam;
K'in poi tang ki briew ba shlur
Sha ki Kliar-lum jong ka Nam.

(c) Ko Pyrem, Ko Pyrem,
Ka la kyndit ka Rngai,
Na ki Kshaid bad ki Khriang,
Bad ki Khlaw jngum ba jngai.
Na ki Riat bad ki Ramsong,
Bunsien nga iohsngew
Ia ka Sngi ba ka iam
Ha ki Sner jong U Klew.

4. (a) How are adjectives formed in Khasi? Give *two* examples in each case. 10 + 6 + 4

(b) Give the imitatives of the following:—(i) *biria*, (ii) *u dkhoh*, (iii) *hateng*, (iv) *Ka mynsiem*.

(c) Why and when are imitatives used? (Answer in Khasi.)

5. Translate into English:— 20

Ka Saia, haba ka la iohsngew ba wan kai u Syiem Mahadem, ka la leh burom-surom ia u kum ka akor bakhraw-batri shisha-shisha. Ynda ka la leit noh sha la iing, uta u Syiem Mahadem u la iashongkai bad ka kmie Syiem, ki la iakren tymmen shaphang ka laiphew jait baroh, bad ynda katto-katne ka Syiem ka la ong, 'Nga sngewkhein-burom ba u khun u la leit iapoi bad la ka mraw, nga'n die noh ia ka lada don uba lah thied.' U Syiem Mahadem de, naba u la lah iohi ia ka jinghabriew jong ka, la lah shoh-tyndep lypa ka jingmut jong u la ka long ka tnga briu ruh, mar-kumta u la ong, 'Katno phi'n die?' Ka Syiem ka la ong: 'Da don u ba'n thied shi-stieh tyngka, y'n thew pynshong bha ha ba'n da shlei, te nga'n ai.' Kumta u la iakut ba u'n wan shim ia ka sa arsngei. Ynda dap arsngei de u la wan lam la ka tynkga shi-stieh. Ka Syiem ka la khot ia ka Saia bad ka la ong ba kan leit noh bad u Syiem Mahadem naba la lah die ia ka ha u shi-stieh ka tyngka.

TAMIL (FOR FEMALE CANDIDATES)

COMPULSORY PAPER

Paper-setter and Examiner—MAHAMAHOPADHYAY VEDANTAVISARAD N. S.
ANANTAKRISHNA SASTRI.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English :—

30

(a) மிடுகண்டு என்ற ஒரு மகரிஷிக்கு வெகுநாள் பிள்ளையில்லாது போக, அவர் பாசிவனைக் குறித்துத் தவம் செய்து ஸத்தபுத்திரன் ஒருவனைப் பெற்றார்.

(b) “எனக்குப் புழு, புல், பூண்டு, முதலிய தாழ்ந்த ஜன்மங்கள் வந்தாலும் வரட்டும்; அப்பொழுதும் உமதுபக்தி என்னைவிட்டு அகலாதிருந்தாற் போடும்.”

(c) சாதாரண ஜனங்களுக்கு உலகவிஷயங்களில் ஓயாது மனம் சென்று அவ்வுலகப்பொருள்களை எவ்விதமாவது சம்பாதித்துச் சுகம் பெறவேண்டுமென்று எப்படித் தோன்றுகிறதோ, அவ்வாறே ஓயாது பகவானிடம் மனம் சென்று அவரையடைந்து ஆனந்திக்கவேண்டும் என்று தோன்றுமாயின அதுவேபக்தியெனப்படும்.

2. கர்மயோகம், பக்தியோகம், ஞானயோகம், இவற்றினை இலக்கணங்களை எழுதவும்.

15

3. பாரதஸாத்திலிருந்து இரண்டு சரிதையையும் அவற்றால் தெரிந்துகொண்ட நீதிகளையும் எழுதவும்.

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4. அடியிற்கண்ட சொற்றொடரുകളில் பிணரியல் இலக்கணங்களை எழுதவும்.

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(a) அவ்வுலகப்பொருள் ; (b) இருந்தாற் போடும் ; (c) பக்தியொளப்படும் ; (d) இவற்றினை ; (e) அவ்வாறே ; (f) அதுவே.

5. உபா—பையா! மயில் பறவை இனத்தைச் சேர்ந்தது 25
 என்கிறாயே! அது பறப்பதைப் பார்த்திருக்கிறாயா? ராமன்—ஐயா!
 பக்கினைப்போல் அது பறந்து செல்வதை நான் பார்த்ததில்லை.
 அதைப்பற்றிய இயற்கைகளையெல்லாம் தாங்களே சொல்லவேண
 றும். உபா—மயிலைப்பற்றிச் சொல்லுகிறேன், கேள்:—மயிலைப்
 பாராதவர்கள் இங்குள்ளமயிலின படத்தைப் பாடுங்கள். மயில்
 உண்மையாகவே பறவை இனத்தைச் சேர்ந்தது. மற்ற பறவை
 களுக் கிருப்பதுபோலவே அலகும், இரண்டு சிறகுகளும், நான
 கு விரல்களுள்ள இரண்டு கால்களும் இதற்கும் இருக்கின்றன.
 ஆனால் இதன இறக்கைகள் இதன் உடம்பின் அளவிற்குச்
 சிறியவையாயும் அதன்கனத்தைத் தூக்கியெழுப்பச் சகியில்
 லாதவையாயுமிருக்கின்றன. ஆதலால் மயில் அதிக உயரமில்
 லாது சுவர்கள்மீதும் மரங்களின்மீதும் சிறுது பறந்துபோய்
 உட்காரும்.

TELUGU (FOR FEMALE CANDIDATES)

COMPULSORY PAPER

Paper-setter and Examiner—DR. B. RAMCHANDRA RAU, M.A., PH.D.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. బాల విద్యాలయములలో చెప్ప వలసిన విద్యాక్రమము విశదముగా వ్రాయుడు. 12
2. లలిత కళలననేమి? వాటిని గ్రహించు పద్ధతి విశదముగా వ్రాయుడు. 12
3. ఆంధ్రజాతీయ విద్యా పరిషత్తు వలన కలుగు లాభములు పేర్కొనుడు. 12
4. గురుకుల సంస్థాపనము వలన కలుగు లాభములను గురించి వ్యాసము వ్రాయుడు. 14
5. “లక్ష్మీప్రసాదము” సాంఘి కనవలలో గణించుటకు కారణము లెవ్వియో వ్రాయుడు. 30
6. “లక్ష్మీప్రసాదము” చదువుట వలన మీరు గ్రహించు నీతులెవ్వియో విపులముగా వ్రాయుడు. 20



CLASSICAL TIBETAN

Paper-setter and Examiner—DR. SATKARI MOOKERJEE, M.A., PH.D.

COMPULSORY PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate the following extracts into English :—

40

(a) བཞི་པ་ཡུལ་གྱི་མས་བཟང་བོ་ཀྱལ་པོས་ཀྱང་བཤེག་མི་ཚོག་པར་འཁར་དགོས་པ་ཡིན་པས། གལ་དེ་མི་རེ་གཉིས་ཀྱིས་གྱིས་ཀྱིས་དང་འགལ་བའི་རིགས་བྱས་ཆོ་ཐམས་ཅད་འཛོམ་གྱོག་ནས་ཉེས་པ་ཆེ་ཆུང་ལ་ལྟོས་དེ་ཆད་པ་འགལ་དགོས། འཁར་མཁན་ཡང་འཁར་དགོས། ཉེས་ཆད་བདང་བའི་དངུལ་ཇི་ཙམ་གྱང་བྱང་འབྲེ་སོང་ནམས་པར་བྱུང་ནས་དེ་འབྲེས་སྤྱི་བོག་དུ་འཛོག་དགོས། སྤར་སྤྱི་པའི་དོན་ཆེ་ཆུང་གང་ལ་དགོས་པའི་ཕྱིར་དུ་བསམ་དགོས་སོ།

ལྷ་པ་སྤུ་ལ་ཡང་མ་ཉམ་ཁ་གཡོགས་སྤྱིད་སྤྱག་ག་རེ་གྱང་ན་ཡང་ཐམས་ཅད་ནས་རྒྱ་ཡོད་མཁན་གྱི་རྒྱ་དང་། རྒྱ་མེད་མཁན་གྱིས་ཁ་པན་ཚོག་པན་སོགས་ཀྱི་སྒོ་ནས་རོགས་རམ་ལྷག་བསམ་ནམ་དག་བྱེད་དགོས་སོ།

(b) ཀྱལ་རིགས་ཀྱི་བྱེད་དེ་ཤིང་གི་གྲིབ་ས་ལ་ཉལ་བ་ན། ཤིང་གཞན་ནམས་ཀྱི་གྲིབ་ས་ཡོལ། དེའི་གྲིབ་ས་ས་ཡོལ་བར་བྱེད་དེའི་ལུས་ལྷིང་དུ་གནས་པས། མཉན་ཡོད་ཀྱི་གྲོང་ཁྱེར་གྱི་མི་རྣམས་ཀྱིས་དེ་བསོད་ནམས་ཅན་དུ་གོ་ནས་ཆོང་དཔོན་ཆེན་པོ་ཞིག་བྱ་མེད་པར་ཤི་བའི་ཆབ་དུ་བསྐྱོས་སོ། དེ་ནས་དེས་འདི་སྤྱི་དུ་བསམ་དེ། བདག་ལ་ཉི་མ་གཅིག་ལ་འབྲེན་བ་ཆེན་བོ་འདི་ལྟ་བུ་གྱང་བ་ནི། བཅོམ་ལྷན་འདས་དགེ་འདུན་དང་བཅས་པའི་ཐུགས་རྗེ་ཡིན་དེ། ད་བཅོམ་ལྷན་འདས་དགེ་འདུན་བཅས་ལ་བསྟེན་བསྐྱར་བྱ་དགོས་སོ།

ལས་མས་ནས། སྤྱད་དངས་དེ་བསྟེན་བཀའ་ཀྱི་ཆེན་པོ་ཤས། ཆོས་ལུས་དེ་ཀྱུན་དུ་ལྷགས་
པའི་འབྲས་བྱ་ཐོབ་པོ། བཀའ་ལྟུལ་བ།

ཆོས་རྒྱལ་སྤྱོད་དུ་ཡིད་འགྲོ་ཡིད་གཙོ་ཡིན།

ཡིད་མགྲོགས་རབ་དུ་དང་བའི་སེམས་ཀྱིས་ནི།

སྤྱི་མཐུན་ཤུགས་ནི་ནས་བདེ་བ་དེ།

འཕྲོ་འཕྲུར་གྱི་བ་ས་ཡོལ་བར་མི་འབྲུར་བཞིན།

གསུངས་སོ།

2. Give a brief statement of the manners and customs of the aristocracy with your comments where necessary. 10

3. Give five well-known proverbs in Classical Tibetan with their English translations and explain their significance. 10

4. Conjugate any three of the following roots in the present, past and future tenses and in the imperative mood :—འཛོང་བ། འཛིན་པ། གཙོད་པ། དཔོག་པ། གཡོག་པ། 9

5. Correct the errors in the following sentence :—སྒྲོན་པོ་
སྤང་ཆེན་གཞིན་པ་པོས་ཁོ་རང་གི་སོ་ལྷག་གིས་གཤད་པ་གཞིན་ཀྱུ་པོ་ལ་གཞུས་པས། 6

3. Translate the following passage into Classical Tibetan :— 25

Now were the mother's eyes opened. In her alarm and distress she remembered the much-wronged Chanda's generous promise of help to her and secretly sent a messenger to him, telling him all through the man, penitently and humbly begging for his forgiveness, and conjuring him to hasten to his beloved Mukulji's side to save him and his father's house of hoary fame. Chanda readily obeyed the summons. He came at the head of a troop of sturdy Rajputs, fought a bloody battle before the gates of the capital, in which the wicked grandfather and some of his sons were killed, and soon purged the state of the remaining usurpers and their retainers.

ADDITIONAL PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate the following extracts into English :—

40

(a) བཅོམ་ཡན་འདས་ཀྱིས་བཀའ་སྤྲུལ་བ། རྒྱལ་པོ་ཆེན་པོ། དེའི་ཆོ་དཔེ་དུས་ན་
བྱ་མོ་དེ་ནི་ད་ལྟར་གྱི་རྒྱལ་པོ་དེ་གྱི་མོ་འདི་ཡིན་དེ། དེའི་ཆོ་མི་དགེ་བའི་སེམས་ཀྱིས་འཕགས་
པ་རང་སངས་རྒྱས་ལ་སྤྲད་པའི་ངག་གི་ཉེས་པས་དེ་ཕྱིན་ཆད་དག་དུ་མི་སྤྲུག་པའི་ལས་སྟོང་
བར་གྱུར་དོ། ཕྱིས་ཆོ་འཕྲུལ་མཐོང་ནས་འབྱོར་ཚངས་བྱས་པས་ནི་ཕྱིར་ཡང་མངའ་བྱད་
མཛེས་ཤིང་བཟང་བ་དང་སྒོ་དང་ཡན་པར་གྱུར་དོ། རང་སངས་རྒྱས་ལ་མཆོད་པ་བྱས་པས་
གང་ནས་གང་དུ་སྒྲེས་ནས་ཀྱང་རིགས་ཆེ་ཞིང་ལོངས་སྟོན་འབྱོར་བ་དང་མཐར་མུག་པར་གྱོལ་
བར་གྱུར་དོ། དེ་བས་ན་རྒྱལ་པོ་ཆེན་པོ་ཇི་ཅམ་དུ་སེམས་ཅན་གྱི་རིགས་སུ་གཏོགས་པ་
ཐམས་ཅད་ནི་ལྷས་དང་ངག་གི་ཉེས་པ་ཤིན་དུ་བསྐྱང་ཞིང་གཞན་ལ་བརྟུས་པ་དང་སྤྲད་མི་
ཤེས་པ།

(b) སངས་རྒྱས་མགོན་པོ་ཡོངས་སྤངས་དེ། ལྷ་གཞན་ཆོ་ལ་ཕྱག་བྱེད་པ། སྒོ་ངན་
གང་གའི་འགྲམ་དུ་ནི། སྒོས་ནས་ཁྲོན་པ་བྱེད་དང་མཚུངས་།

(c) ཤེས་རབ་དང་མཉམ་མིག་མེད་དེ། མྱོངས་པ་དང་ཡང་ཐུན་པ་མེད། གན་དང་
འདྲ་བའི་དགྲ་མེད་དེ། འཆི་བ་དང་མཉམ་འཛིགས་པ་མེད།

(d) གཞན་ལས་འཛུལ་ཞིང་ཟས་ཞིས་འདོད། སྤྲོད་མས་འཛུལ་ཞིང་ཁེངས་པ་རྒྱུ།
བསྟན་བཅོས་ཤེས་མེད་ཙོད་པར་འདོད། རྒྱུད་ཀྱི་དེ་གསུམ་བཞད་གད་གྱུ།

2. Narrate in your own words the story of the wise and the foolish bird. 10

3. Explain the following extract in your own words:— 5

བསགས་པ་ཀུན་གྱི་མཐའ་ཟད་ཅིང་།

མཐོན་པོ་རྣམས་ཀྱི་མཐའ་ལྷུང་འགྱུར་།

ཐུང་པའི་མཐའ་ནི་འབྲུལ་བ་ལྟེ།

གསོན་པའི་མཐའ་ནི་འཆི་བ་ཡིན།

4. Conjugate any *three* of the following roots in the past and future tenses, and in the imperative mood:—

གསོན་པ། དཔོག་པ། འཛོང་བ། འཇུགས་པ། འཛོ་བ། 9

5. Correct the errors in the following:— ལྷ་ལ་རིགས་གསུམ་ཟེར་གྱི་མོ་དང་། རྒྱ་རིགས་དམང་རིགས་དེ་གཞིན་དེ། ལྷ་ལ་གཡོན་དན་འདི་ཡོད་པའི། ལྷ་མོ་དེ་ནི་འདིར་འོན་གཅིག། 6

6. Translate the following passage into classical Tibetan:— 30

The late Babu Krishna Chandra Majumdar of Jessore (Bengal) was a poet and a man of startling honesty. He was simple as a country girl and judged men's hearts by their professions. Once upon a time it was proposed to raise his salary as the senior teacher of Sanskrit. Thereupon he went home to his servant and asked him whether the money that he gave him month after month was sufficient for the purpose or not. After this Krishna Chandra came back to school and told the headmaster that he did not stand in need of the increment, which might be given to another man whose necessity would make it welcome.

CLASSICAL ARMENIAN

Paper-setter & Examiner—MR. M. J. SETH, M.R.A.S.

COMPULSORY PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English :—

30

Խակ նոքա առ սերն Վրիստոսի յոյժ խնդութեամբ
ընդունէին զամենայն չարչարանսն վասն մեծի յուսոյն որ
առաջոյ պատրաստեալն կայ պատուիրանապաճ համբերո
ղացն : Որչափ չարութիւն զանարգութիւնն բազմացու
յանէր, նոքա ևս քան զեւս զօրանային ի սերն Վրիստոսի,
մանաւանդ զի բազումք ի նոցանէ զգիրս սուրբս ուսեալ էին
ի մանկութենէ, պնու զանձինս միտթարէին և զընկերոն
քաջալիւրէին, և աշկարայ զպաշտօնն ունէին և բազ մացու
ցանէին :

Ս ան որոյ և բազումք ի հեթանոսաց, որոց հեշտ և
ցանկալի ձայնքն թուէին, քաջալիւրէին զնոսա, և ասէին լանս
միտթարութեան, իբրեւ թէ լաւ իցէ մարդոյ մահու չարի
ճգնել քան յայդպիսի օրինաց ուրանալ :

2. Decline (Հոլովեա) the following words :—բարի, հիմն,
ոսկր, հողմ, քոյր, այր, մանուկ, պարտեզ, տուն, մեծ, մանր : 10

3. Conjugate (Խոնարհեա) the following verbs :—
խոնարհեցուցանեմ, ուսանիմ, խորհիմ, տամ, ըմպեմ : 10

4. Parse (Սկիզբութեա) the following :—Ճմարիտ ալ,
գասիրին է օրինակաւ քաջի Գործոց նախահարց շոգիո որդւոց
զարթուցանել : 10

5. Correct the following :—Ս՝եծ Վերսէս էր առն բարցր
և ցանգալի յասակով և վահեղուչ գեղիւ զի ոչ գտնուէր ի
Հայք նման նորա գեղեցկութիւնով : 10

6. Translate into Classical (գրաբար) Armenian :— 30

These erudite Armenian monks have not only edited and published the Armenian classics of the fifth century—the Golden Era of Armenian literature—but at the same time translated into Classical Armenian the

classics of ancient Rome and Greece. Besides these, innumerable original works of high literary merit on the religion, history, literature, archæology, architecture, culture and antiquities of ancient Armenia have been issued from this institution during the past two hundred years. The good Mekhitharist Fathers have placed the entire Armonian nation under a deep debt of gratitude for the yeoman services they have so assiduously rendered to the cause of national literature.

ADDITIONAL PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English :—

30

Լ՛րք երկու ելին ի տաճարն կալ յաղօթս, մին փարիսեցի և միւսն մաքսաւոր : Փարիսեցին կայր մեկուսի և զայս առանձինն աղօթս մատուցանէր, Լ՛ստուած իմ, դռհանամ զքէն ոչ ձեմ ինրև զայլս ի մարդկանէ, զյափշտակողս, և զանիրաւս և զշուսս, կամ իբրև զայս մաքսաւոր, այլ պահեմ երկիցս ի շարաթու, և տամ տասնորդս յամենայն ստացուածոց իմոց : եւ մաքսաւորն կայր մեկուսի, և ոչ կամէր և ոչ զաշն ընդ երկինս ամրառնալ, այլ կոծէր զկուրծս իւր, և ասէր, Լ՛ստուած իմ, քաւեա զիս զմեղաւորս : Լ՛սեմ ձեզ, էջ սա արդարացեալ ի տուն իւր քան զնա :

2. Give the meanings of the following words in English :— 10

Հոգեբանութիւն, մտայնութիւն, գաղափարական, գեղարուեստ, վիրաբոյժ, հրապարակագիր, մատենագիր, ազիկար, ժլատ, մշակոյթ.

3. Define in Modern Armenian the following grammatical terms :—(ձատկացուցիչ, ստորոգելի, էական բայ, թուական ածական, համա ձայնութիւն, գերբայ անցողական բայ, չէզոքական բայ, հայցական սեռի խնդիր, բնութեան խնդիր :

20

4. Translate into Modern Armenian :—

40

But there is a love which exceeds that of a mother, there is a devotion stronger than that which warms the breasts of devoted brothers, and the next trial wrung the breast of the hero ; the arrow entered into his soul when he thought of parting from Sita, the bride of his youth, the sole object of his affection. We follow him to his home, and we hear him announce, for the first time, with trembling accents, the news. He reminds her of her duty to comfort her mother-in-law, to be kind to her brother-in-law, and now her sovereign, Bharata, and to await his return.

BENGALI VERNACULAR

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Head Examiner—PROF. SUNITIKUMAR CHATTERJI, M.A., D.LIT.

- (SRIMATI BIBHUBALA BAKSI, B.A.
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Examiners— }

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Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Explain with reference to context *two* of the passages in Group A and *two* in Group B. 24

Group A.

(Any TWO)

(a) উভয়ে প্রস্তরখানিকে স্থানচ্যুত করিলাম। তাহার পর উহা ঘোর রবে প্রাক্‌গে পড়িল; শব্দে কি আঘাতে তাহা ঠিক জানি না, ব্যাঘ্র উঠিয়া দাঁড়াইয়াছিল, তাহার পর পড়িয়া গেল।

(b) বহিমের দল ছাড়িবেন কেন? তাঁহারা সোমপ্রকাশের ভাষাকে “ভট্টাচার্য্যের চানা” নাম দিয়া বিক্রপ করিতে লাগিলেন।

(c) দুর্বল সন্তানের দুর্দশা দেখিয়া জননীর চোখের জল ভিন্ন দিবার আর আছে কি? সন্তানেরা আপনার মধ্যেই কলহ করিতেছে।

Group B.

(Any TWO)

(a) তুচ্ছ এই ক্ষুদ্র পুরী,—সেই ঝটিকায়
একটি বিশাল রাজ্য পড়েছে ভাঙিয়া।
তুচ্ছ তব ক্ষুদ্র শাস্তি,—দেখহ চাহিয়া
কি শাস্তি পশ্চাতে তুমি গিয়াছ রাখিয়া।

(b) হৃদয় আছিল যারা, প্রায় গতপ্রাণ তারা,
আর করে করিব সহায়।
আজি দুই শিশু মারি, কিংবা যে আপনি মরি,
তবে ক্ষত্রধর্ম রক্ষা পায়।

(c) এ জগতে কেউ ওর আপনার নাই,
কেউ হব বোন মোরা, কেউ হব ভাই;
তা হ’লে ও বেদনা ভুলিবে,
তা হ’লে বা পুলক হাসিবে।

2. Give in your own words the story of *প্রেমের ঠাকুর* by Khagendranath Mitra. 10

3. Quote from memory the *first eight* lines from any *one* of the following poems :—*হিচকলে* by Bejoychandra Majumdar, *শবৎ* by Rabindranath Tagore, *কনকভূমি* by D. L. Roy. 6

4. Amplify the thoughts contained in *either* of the following :— 15

(a) কহিল ভিকার ঝুলি টাকার খলিরে,
আমরা কুটুখ দৌহে তুলে গেলি কিরে ।
খলি বলে, কুটুখিতা তুমিও তুলিতে
আমার যা আছে গেলে তোমার তুলিতে ।

(b) রথযাত্রা, লোকারণ্য, মহাধুমধাম,
ভক্তেরা লুটায় পথে করিছে প্রণাম ।
পথ ভাবে আমি দেব, রথ ভাবে আমি,
মূর্তি ভাবে আমি দেব, হাসে অন্তর্ধামী ।

5. Translate the following into Bengali :— 15

Ramsaran ran off with breathless speed to inform his master of what had happened. It was a holiday and several players had gathered together at Kedar Babu's house. The game was in full swing when Ramsaran burst in upon them. 'Babu, Babu', he cried out, 'come home at once'. Mohendra Babu got frightened and asked, 'What's the matter? Any one taken ill?' Ramsaran replied, 'A robber has come to the house. He has brought a gun with him and says, "I am the Babu's son-in-law".' Upon this there was a general outburst of laughter.

6. (a) Correctly spell the following words :— 4

চিরজীবি ; ব্যাখা ; সাহ্য ; শারিরিক ; লক্ষী ; উজল ; উর্দ্ধ ; মুমূর্ষু ।

(b) Change the narration of the following :— 6

(i) হরি বলিল, “ছি, রাম, তুমি এ কি করিয়াছ ! তোমার নাম শুনিলেও যে ঘৃণা হয় ।”

(ii) আলেকজান্ডার যখন পুরুকে জিজ্ঞাসা করিলেন যে তিনি তাঁহার কাছে কিরূপ ব্যবহার আশা করেন, পুরু তখন সগর্বে উত্তর দিলেন যে তিনি রাজার মত ব্যবহার পাইতে আশা করেন ।

7. Write an essay on *one* of the following subjects ;— 20

- A folk-tale that you may have heard or read.
- The chief domestic animals of Bengal.
- Your favourite book, stating reasons why you like it.

ASSAMESE VERNACULAR.

Paper-setter—SRIMATI SUKHALATA DAS, M.A., B.T.

Examiners— { MR. ATAUR RAHAMAN, M.A.
 ,, SURYYAKUMAR BHUIYAN, M.A.
 ,, DIBAKAR GOSWAMI, M.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Explain with reference to the context *either* of the following passages :— 10

(a) ঈশ্বৰে ৰচা বিশ্ব যে সাৰময় পুথি তাক এনেই বুজিব পাৰি। এই বিৰাট পুথি পাঠ কৰিলে সকলো জ্ঞানৰ সাৰ পোৱা যায়। নীতিশিক্ষাৰ নিমিত্তে চাণক্য, বিধি শিক্ষাৰ নিমিত্তে মনু, বা ধৰ্মশিক্ষাৰ নিমিত্তে পতঞ্জলী চৰ্চা কৰিবৰ কোনো সন্ধান নাই। পুৰুষাৰ্থ কৰিলে নীতিৰ নেতা, বিধিৰ বিধাতা, আৰু জ্ঞানৰ সমষ্টি বিশ্বকৰ্ত্তাৰ কাৰ্য্যৰ পৰা সকলো শিক্ষা লাভ কৰিব পাৰি।

(b) খুচুৰীয়া খৰচৰ চোৰাং গতি, সি বেগতে চকুত নপৰে কিন্তু বহুবেকৰ খুচুৰীয়া খৰচ গোট কৰিলে ডাঙৰ খৰচতকৈও ডাঙৰ হয়। বেজীৰ জলজ্ঞা মনে, কুঠাৰৰ জলজ্ঞা নমনে এই বচনটো সকলো ঠাইতে চলিত আছে। এটকাৰ পাচ এৰি একডালৈ হামৰাও কাটিলে মানুহে এই পটন্তৰ দিয়ে। কিন্তু দৰাচল পক্ষত এদিনীয়া এটকা এৰি খুচুৰীয়া খৰচৰ একডালো বৰকৈ চকু ৰখা উচিত।

2. Answer any *one* of the following questions :—

(a) Give the summary of the essay on the use of money (ধনৰ ব্যৱহাৰ) as given in *Saralhi*.

(b) Describe the evil consequences of *either* anger (ক্ৰোধ) or greed (লোভ).

(c) Briefly mention the advantages of forming good habits.

3. *Either*, Give the contents of the poem you like best in *Sadari*. 15

Or, Write a general appreciation of the book *Sadari*.

4. Give the meanings of any *five* of the following words :— 5

ৰাপ, আঢ়াৰস্ত, বাছকবনীয়া, আলম, বিভূতি, ভুৱা, ছিদাংটেক, উপালন্ত, বিজ্ঞানি, দিলদৰিয়া।

5. Frame sentences with any *five* of the following words :—

5

পাৰ্ধ্যমানে, বাটকুৰিবাই, লগুৱালিক্‌চো, উধামুখাকৈ, দকমকীয়া, সন্তেদ,
তলিকুটা, উপলুঙা।

6. Rewrite any *five* of the following words, correcting mistakes where necessary :—

5

সাংসাৰিক, কুদ্রসিংহ, মনোকষ্ট, আশ্চৰ্য্যতা, দিৰ্ঘস্থিতা, পৰমীশ্বৰ, প্ৰবৃত্তি,
নিৰ্বলি।

7. Amplify in Assamese :—

15

মহামহাপুৰুষৰ চানেকীৰে জীৱনৰ

আমিও কৰিব পাৰোঁ জীৱন গঢ়িত।

অভিনয় শেষ হ'লে জীৱনৰ অন্তকালে

থৈ যাব পাৰোঁ খোজ সময় বালিত ॥

8. Translate into Assamese :—

15

Then Perseus stood upon the threshold and called to the king by name. But none of the guests knew Perseus, for he was changed by his long journey. He had gone out a boy, and he was come home a hero ; his eye shone like an eagle's, and his beard was like a lion's beard, and he stood up like a wild bull in his pride.

He sang of the treasures of the hills, and the hidden jewels of the mine, and the virtues of all healing herbs, and of hidden things to come.

9. Write an essay on *one* of the following subjects :—

20

- The value of reading newspapers.
- Village life in Assam.
- How to spend leisure hours.
- The railway system.

MANIPURI VERNACULAR

Paper-setter—MR. SANJIBAN NADIA SINGH.

Examiner—MR. RAJ KUMAR SETHU SINGH, B.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Explain briefly how Mahadev introduced *Lailaharoba* in Manipur in imitation of *Rashlila*. 10

2. *Either*, (a) Give an outline of the conversation between Srikrishna and Satyabhama from your text book. 10

Or, (b) What do you know of কোঁওইবী-লাইৱেমা as depicted in your text book ? 10

5. Narrate the lamentations of Sri Ram Chandra when Lakshmana was fatally wounded by Saktisel. 10

4. Explain any *two* of the following extracts with reference to the context :— 5+5

(a) মুনি ২বা—নিষ্কাম প্রেমদা ঈশ্বর নিংগদবনি, ঐদি করিগুচা ফল অমগী দমক লাইনিংবা নন্তে ।

(b) ঝংহ্লিংদবা খবক, তাহ্লিংদবা পাও, উহ্লিংদবা পোং হাঈবা অসি মতম কুইনা খক থুগুনা খষা যাদে ।

(c) মুনি ১—ঐনা নিংজবদি ঐগী কশ্বগী মতুং ইয়া বিখিনা অমমাল্লৈ হাইনা নিংজৈ ।

5. Amplify any *one* of the following :— 15

(a) লাইবজা তষা ডাক ডাইছুনা লৈবা চুমদে । তুমছুনা লৈবা নোংশাগী মধাদা শাশিংনা চাবিঘু হাইছুনা খক চংলকপা তোদে ।

(b) অতনবা হাইবসি লাইরনবগী অমম্ঃ মিংচং খিনবগী মরু ওইবা রম অমনি ।

6. Translate the following extract into Manipuri :— 15

Vikrama was not only a mighty king and a great warrior, but a very famous judge as well. People said that there was no judge like him, either before him or after him. He never made an error. Every one who brought up a case before him for judgement went away satisfied, the man who lost the case as well as the man who won it.

7. (a) Fill up the ellipses in the following extract :— 6

প্রকৃতিগী পুকনিং—ফজরবা মফমদা অতিয়াদা শাবা উত্তানগী মতোগুয়া কৈথেলমানবী—থেল অসি—বাওমুক চিকখুবা লম অমদা লৈ । তুরেল মচা—মিকপ মিরাওখোনগী মতোগুয়া বা—লাওনা অভীতকী স্থতি—চেনথরি ।

(b) Construct short sentences with any *four* of the following words :— 4

মহীরেন, কোনসাইপুমা, নোংজেন, মোইরাংগেন, ইছুনিংখো ।

8. Write an essay on any *one* of the following subjects :— 20

- (a) Forgiveness is the noblest revenge.
- (b) The child is the father of the man.
- (c) Prosperity gains friends, adversity tries them.
- (d) A sunset scene in your native village.

MAITHILI VERNACULAR

Paper-setter—KUMAR GANGANANDA SINHA, M.A.

Examiner—PANDIT BABUA MISRA JYOTISHACHARYYA.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Explain fully, with reference to the context, any four of the following passages :— 20

(a) सुनि गिरिजा वृत्तान्त महादेव कहलनि कथा ।

तखना सीताकान्त मारुतनन्दन सों कहल ॥

(b) लखौ धिकि चपला छाया सनि तन तारख्य तरङ्गे ।

खग्रीपम वनिता सुख तेहन मन अभिमान अभंगे ॥

(c) गुरु सङ्कोच शोच बड़ भारी, कहलनि किछु न लजाय ।

कहलनि लक्षण धिकयि जनकजा केकयि दुर्यह पाय ॥

(d) ज्ञानघेय रमेश, उपदेष्टा रघुवीर जँह ।

तारा विगत कलेश, उदित ज्ञान करुणान्तरस ॥

(e) के देलक उपदेश, सर्वनाशकर वचन सौं ।

यनु यनु रुप लङ्केश, अरि धिक से जन बध्य धिक ॥

2. *Either*, What are the principal events narrated in the वनपर्व chapter of the *Saṅkshipta Mahābhārata Sūtra* (संक्षिप्त महाभारत सार) by Paṇḍit Rāmānand Thākura ? 12

Or, Describe in Maithili how कौचक was killed.

3. Write in not more than 200 words the story of सुकन्या । 8

4. Amplify in Maithili the idea contained in any one of the following :—15

(a) Fair criticism is a good tonic.

(b) Give every man thine ear, but few thy voice ;

Tako each man's censure, but reserve thy judgement.

(c) Much reading is like much eating—wholly useless without digestion.

(d) कत कत जनम निरर्थक बीतल जनन मरन भय टेर ।

मायाबल नहि कतहु मिलल कल सोइ विवशमन भेर ॥

5. Translate into Maithili :—

Hindu women wear more ornaments than others of the corresponding grade in Society. Ornaments bedeck the head, the ears, the nose, the neck,

the arms, wrists, fingers, the waist—until motherhood is attained and by some even later—and the toes. Children wear anklets. Each community affects its peculiar ornaments, though imitation is not uncommon. Serpents with several heads, and flowers, like the lotus, the rose, the champaka, are among the most popular objects of representation in gold or silver. 15

6. *Further*, Write a letter in Maithili to your mother describing how you are doing in the examination. 10

Or, Construct a sentence in Maithili to illustrate the use of हल्, अव्ययीभाव, तत्पुरुष, कर्मधारय, and बहुव्रीहि *sanāsas*.

7. Write an essay in Maithili on either of the following subjects :— 20

(a) *One of the places you have visited* : (i) How you went there. (ii) What you saw there. (iii) What you learnt there and how. (iv) What is your opinion about the place ?

(b) *Union is strength* : (i) Is it so ? Illustrate. (ii) Have you ever experienced it yourself ? If so when and how ? (iv) How do you propose to follow the maxim in your life ?

HINDI VERNACULAR

Paper-setter—MR. NALINIMOHAN SANYAL, M.A.

Examiners— { MR. SIBNARAYAN LALA, A.I.S.A.
 ,, KESARIKANTA SARMA, M.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate the following into Hindi — 15

The rich man, though he lay upon the softest bed, could not sleep, because he had passed the day in idleness ; and though the nicest dishes were presented to him, he could not eat with pleasure, because he did not wait till nature gave him an appetite, do exercise, nor go into the open air. Besides this, as he was always idle and ate too much, he was almost always ill ; and as he did good to nobody, he had no friends ; even his servants spoke ill of him behind his back ; and all his neighbours, whom he oppressed, hated him.

2. Write an essay on one of the following subjects :— 20

(a) The air ; its importance in nature—pure air—how made impure—what is wind—when is wind agreeable and when disagreeable.

(b) Health : its essentials—how to keep oneself in health.

(c) Rivers : how formed—their usefulness—their importance in the past.

3. Give in simple Hindi the main ideas contained in the following :— 15

जिस सामयिक कार्य वा विचार-धारा में जो व्यक्ति रहता है उसका उसपर कुछ न कुछ पड़े बिना नहीं रहता। परन्तु इसका यह अर्थ नहीं है कि वह केवल उस समय की

कठपुतली ही होगा जिसमें उसने जन्म लिया है। कभी न कभी वह व्यक्ति ऐसा चरित्रवान तथा नैतिक क्षमता प्राप्त ही कर लेता है जो उसे अपने साथियों से ऊपर उठा देते हैं। प्रचक्ष व्यक्तित्व एक बार तो कोई बड़ा अवसर मिलते ही अपनी पीढ़ी तक को स्थिर मार्ग से घुमाकर एक नये चक्र में डाल देता है।

4. (a) Write sentences to bring out the genders of *five* of the following words :—बीषधि, बर्ताव, गोरू, पक्षी, विनय, चुट्टी, शक्कर, दर, तन्वाकू, खाट, शिशु, दरिया। 5

(b) Illustrate all cases of the use of the “ने” विभक्ति। 5

5. Give an account in Hindi of the interview between Hanumān and Sītā at Lañkā. 8

6. Give an estimate in Hindi of the character of Dārā. 8

7. Explain *three* of the following extracts—one from Group A and *two* from Group B :— 24

GROUP A

- (i) कहँ तीर पै कमल अमल सोभित बहु भँतिन ।
कँडू सैवालन मध्य कुसुदिनी लागि रहि पँतिन ॥
मनु दृग धारि अनेक अमुन निरखत ब्रज सोभा ।
कै उमगे प्रिय-प्रिया-प्रेम के अनगिन गोभा ॥
- (ii) भूषन भनत जहँ परसि कै मनि पुहुपरागन की प्रभा ।
प्रभु पीतपट की प्रगट पावत सिंधु में घन की सभा ॥
मुख नागरिन के राजहँ कहुँ फटिक मङ्गलन रंग में ।
निकसंत कीमल-कमल मानहुँ अमल गंग-तरंग में ॥

GROUP B

- (iii) माई' अगर उजार में जरत महा पछिताय ।
गुनगाइक कोऊ नहँ जाहि सुवास सुहाय ॥
जाहि सुवास सुहाय सुने बन में कोऊ नाहीं ।
कै गौदड़ कै हिरन सु तो ककु जानत नाहीं ॥
कह गिरिधर कविराय बड़ी दुख यहै गुसाई' ।
अगर आक की राख भई मिलि एकै साई' ॥

(iv) राजर्षि के मन्त्रियों की आभा-प्रभा के ऊपर मसिही क्रॉस का चिन्ह सांसारिक विभव के ऊपर धर्मार्थ बलिदान की कैसी उत्कृष्ट दीक्षा दे रहा था कि सन्नदय दर्शक उस वृद्धव्याही हृदय की क्या कभी भूल सकता है ?

(v) जहाँ दुनिया भर की चमूटे, रंगतदार, खुशनुदार और तरहदार गुलबुटे की पेड़ पत्ते चाराका थे, वहाँ पर अब बजाय उनके चाक, धतूर, जंगली और कंटीले पौधों ने अपना दखल जमा लिया, और इस बात को साबित कर दिया है कि, जहाँ पर खुशनुमा बाग ही, क्या समय के फेर से वहाँ पर जंगल तयार नहीं हो सकता ?

NEPALI VERNACULAR

Paper-setter & Examiner—RAI SAHEB HARIPRASAD PARDHAN, M.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into Nepali any *one* of the following passages :— 30

(a) The name "India", however, has a purely geographical use ; the different parts or provinces included in it have populations widely different in customs, language, and physical appearance. Even where there is a common Muhammadan faith, it does but little to obliterate natural and caste characteristics. The aggregation of races under the general name of "Hindu" has even less meaning as indicating anything like unity ; for the Hindu sects, as well as their deities and customs of worship, are local and multiform ; hardly anything is common to all, except certain general religious ideas and various caste rules and social principles. Vast numbers not only of low-caste or outcaste people, but of fine races (like the Punjab Jat) are "Hindus" in hardly any other sense than that they are neither Muhammadan, Christian, nor Parsi. These always follow their own land tenure and inheritance customs. They have, however, a general respect for Brahmans, and a certain tincture of Hindu religious ideas.

(b) The extravagance and cruelties of the heir apparent, who was countenanced and supported by the Maharaja, produced much discontent in the country, while the intrigues of the only surviving Maharani who was anxious for the succession of one of her own sons, led to endless family feuds. Matabar Singh was recalled from the Punjab in 1843 and was made Prime Minister. In 1845 he was murdered at the instigation of one Gagan Singh, a favourite of the Maharani, who immediately made him her confidential adviser. In 1846 the murder of this man and the massacre at the house of thirty-one of the most influential chiefs paved the way for the rise of Jang Bahadur to the office of Prime Minister.

2. *Either*, Compare in Nepali the characters of Sharmista and Debyani. 15
Or, Depict in Nepali the character of Puru.

3. Fill up the gaps in the following passage :—

10

उता महाराज आफु —— त्यो किसिम रुक्न —— लौ महारानी ले चनेक ताना —— देखेर चल्थनै —— चुर हुंदै बिष्णुमा बाटिका —— पसे । आफुनु जान —— बाटी मा कसे ले बाधा —— सर्प जुन रीत सङ्ग जिन्धी —— त्यो बाधा दिने —— काँचे चपाउने —— गटेक चसै रीति सित रानी को —— ले उन लाई पनी तेस्को फल तत्कालै —— इच्छा भयो ।

4. Write, in Nepali, a letter to your father informing him about your experiences during your school career, and what you wish to do after you have passed the final University Examination. 15

5. Write in Nepali an essay on any one of the following subjects :— 30

- (a) Honesty is the best policy.
- (b) Usefulness of the cow as a domestic animal.
- (c) Self-help.

MARATHI VERNACULAR

Paper-setter & Examiner—MAHAMAHOPADHYAY PANIDIT SITARAM SASTRI.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Write an essay in Marāthī on any one of the following :—

- (a) खरोखरीची संपत्ति ; (b) संपत्तीचा सदुपयोग ; (c) खरे सुख । 20

2. What do you think about महादेव गोविन्द रानडे as a man ? 10

3. Amplify the following :—

- (a) मदगजगमनेनें मागुती चालकेली विनततगुलता हे तत्कमीपास नेली । 10

पुनरपि फचके तो फारसा दूर नाहीं जबलिजबलि ऐसा भासला हंस कांहीं ॥१॥

मंदाकिनीमधिल औं कनकारविदे तीं जिवितों सदुलनालसृष्टाल कंदें ॥

आज्ञी असो दृपसुते तरि कांचनाचे जे कार्य ते धरिल कीं गुण कारणाचे ॥२॥

- (b) जलीं दांतें नके हिरदपदमांसास्थि उकरी, करी प्राण त्यागी सुमति सुचली तो 10

भडकरी ॥

करी धांवा कीं वो सखभवर जो देवनिकरीं करी धे अपाया कमल पदपद्म
सखकरी ॥१॥

स्वापन्यतुल्य सखबूनि निजप्रजेतें एकांत सेवित असे नृप शांतचित्ते ॥

गानांत हिंडवुनिया अपुल्या कुलातें जाती जसा गज थकीनि हिमस्यलातें ॥२॥

4. Write what you know about Bhārata as an important *Kāvya* 10

5. Parse the following :— 10

शास्त्राच्या आज्ञा मोडचें पाप आहे ।

6. Translate into English the following :— 15

मार्गांत गावामध्ये कोणी सावकार रहात होता. त्याने त्या दिवशीं नानांस घरीं बोलावून नेऊन त्यांचे उत्तम आदरातिथ्य केलें. तेथें ही शब्दूने पाठलाग केला झालून त्या सावकारानें नानांस एका गाडींत बसवून जयनगरास खाना कळन दिले. वाट चालतां चालतां त्यास संशय आला की, या सावकाराचे मनांत आपणास कांही तरी दगा करावा असें आहे. मग ते गाडी सोडून पायींच मार्गक्रमण करूं लागले कांही अंतरावर लष्करापै को चार पांच दक्षिणी माणसें भेटलीं, त्यां बरोबर सात मजला कळन नाना रेवडीस पोचले. रेवडीस बालेराव उपनांवाचे चौघे भाऊ असत, त्यांनीं मोठ्या अगत्यानें नाना बद्दल शोध चालविला होता. त्यांचो गांठ पडतांच बालेरावांनीं त्यांस घरीं नेऊन प्रेमपूर्वक पाहुणचार केला ।

7. Translate into Marāṭhī the following :— 15

Once upon a time there lived in a sea-coast town a fisherman who was very poor, being unable to earn even so much as would barely pay for the maintenance of himself and his family. It was his practice every day to get up very early before sunrise and go in the sea to catch fish. He used to cast his net four times and live on what fish he could catch, thereby never casting his net oftener than that. One day he got up very early and went to the sea-shore to catch fish in the moonlight ; taking off his clothes, he cast his net in the sea and waited on the shore. After a while, when he began to haul in the net, he found it very heavy, and was highly delighted at the thought of having caught a large number of fish.

URDU VERNACULAR

Paper-setter—MAULVI SYED MD. TAHIR RIZWI, M.A.

Examiners—{ KHAN BAHADUR REZA ALI WAHSHAT.
MAULVI NASIR ALI KHAN, M.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Re-write in your own Urdu :—

15

یوں کہنے کو تو سبھی مُنہ سے کہتے ہیں کہ دنیا فانی ہے۔ چند روزہ ہے۔ خواب ہے سراب ہے سایہ ہے سحاب ہے برق بے تاب ہے۔ مگر مصیبت کے وقت بخوبی ظاہر ہو جاتا ہے کہ زبان ہمارے دل کی سچی ترجمان نہیں۔ کیا کوئی فانی ایک فانی حالت کیلئے اتنا غل مچاتا اور اسقدر روتا پیتتا ہے۔ مصیبت پر جو منفعت ہم نے ہمیشہ مترتب ہوتے دیکھی وہ تو یہ ہے کہ مصیبت آدمی کے مستقبل کو اسکی ماضی سے ضرور بہتر کر دیتی ہے۔ یعنی اگر انسان کھل تھا تو مصیبت کے بعد ضرور چست و چلاک ہو جاتا ہے۔ آرام طلب تھا تو جفاکش۔ بھولا تھا تو سیانا۔ مسرف تھا تو کفایت شعار۔ بد پرہیز تھا تو محتاط۔ جلدباز تھا تو دھیمہ۔ آوارہ تھا تو نیک کردار۔ جس آدمی پر کبھی مصیبت نہیں پڑی نہ اسکی عقل کا ٹھکانا۔ نہ اسکی بات کا بہرہ رسا۔ نہ اسکا دین دُرس۔ نہ اسکی اخلاق شایستہ۔ اسکی علامہ آدمی کا دستور ہے کہ ایک حالت کیسی ہی عمدہ کیوں نہ ہو اگر ساری عمر یکسانی کے ساتھ چلی جائے تو اس حالت کی عمدگی کا احساس باقی نہیں رہتا بلکہ اکٹا کر اُس حالت سے نفرت کرنے لگتا ہے *

2. Give the moral of either of the following, in your own Urdū :—

5

جوانمردی کا کام or دولت اور وقت کا مذاظرہ

3. Explain fully any two of the following in Urdū :—

25

(a)

تغلب میں بدنیتی میں دغا میں

نمرد اور بدارت فریب اور ریا میں

سعایت میں بہتان میں افترا میں

کسی بزم بیگانہ و آشنا میں

نہ پاؤ گے رسوا و بد نام ہم سے

بڑھے پھر نہ کیوں شان اسلام ہم سے

اُسے جانتے ہیں بڑا اپنا دشمن

ہمارے کرے عیب جو ہم پر روشن

نصیحت سے نفرت ہے ناصح سے اَن بن

سمجھتے ہیں ہم رہنماؤں کو رہزن

یہی عیب ہے سب کو کھویا ہے جس نے

ہمیں ناؤ بھر کر دبویا ہے جس نے

(b)

گرداب پر تھا شعلہ جوالہ کا کمان

انگارے تھے حباب تو پانی شرفشان

مُنہ سے نکل پڑی تھی ہر اک مروجے زبان

تہہ پر تھے سب نہنگ مگر نہی لبوں پر جان

پانی تھا آگ گرمی روز حساب تھی
 ماہی جو سیخ آب پر آئی کباب تھی
 آئینہ فلک کر نہ تھی تاب و تپ کی تاب
 چھپنے کر بوق چاہتی تھی دامنِ سحاب
 سب سے سرا تھا گرم مزاجوں کا اضطراب
 کافور صبح تھوڑتھوڑا پہرتا تھا آفتاب
 بھڑکی تھی آگ گندِ چرخِ اثیر میں
 بادل چھپے تھے سب کو زہریلے میں

(۷)

محفل ہستی ترے ربط سے ہے سرمایادار
 جس طرح ندی کے نغموں سے سکوتِ کرہسار
 نیرے فردوسِ تخیل سے ہے قدرت کی بہار
 تیری کشتِ فکر سے اُگتے ہیں عالمِ سبز و زار
 زندگی مضمحل ہے تیری شوخی تحریر میں
 تابِ گویائی سے جنبش ہے لبِ تصویر میں
 لطفِ گویائی میں تیری ہمسری ممکن نہیں
 ہو تخیل کا نہ جیتک فکرِ کامل ہم نشین
 ہائے اب کیا ہو گئی ہمدستان کی سر زمین
 آہ آہ نظارہٴ آموز نگاہِ نکتہ بین
 گیسوئے اُردو ابھی مذتِ پذیرِ شانہ ہے
 شمع بھی جو بندہٴ دلسوزی پرورانہ ہے

4. Form sentences illustrating the use of the following :—

10

ناک کا بال ہونا - چھاتی پر مورنگ دلنا - آندکھ بند ہونا - چراغ گل
ہونا - ناکوں چنے چیرانا *

5. Give the difference in the significance of any *two* of the following pairs of sentences :—

5

وہ جاتا ہے and وہ جانا چاہتا ہے
حیدر مجھ سے ملا and حیدر مجھ کو ملا

6. Translate the following into Urdū :—

15

In the present day it is not necessary that generals or great officers should fight with their own hands, because it is their duty to direct the movements and exertions of their followers. The artillery and the soldiers shoot at the enemy, and men seldom mingle together and fight hand to hand. But in ancient times kings and great lords were obliged to put themselves into the very front of the battle and fight like ordinary men with lance and other weapons.

7. Write an essay in Urdū, on *one* of the following :—

25

- (a) The rainy season in Bengal.
- (b) A railway journey.
- (c) Patriotism.

(d) ہر گھڑی منقلب زمانہ ہے - یہی دنیا کا کارخانہ ہے

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KHASI VERNACULAR

Paper-setter—MR. ROY ROWLAND THOMAS, M.A.

Examiner—MR. WILSON READE.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate the following passage into Khasi:—15
 Alnaschar was entirely swallowed up in this chimerical vision, and could not forbear acting with his foot what he had in his thoughts; so that unluckily striking his basket of brittle ware, which was the foundation of all his grandeur, he kicked his glasses to a great distance from him into the street, and broke them into ten thousand pieces.
2. Compose a short story in Khasi to illustrate *one* of the following maxims:—(a) No pain no gain. (b) The more hurry the less speed. 10
3. Describe after the author of *Ka Kitab Jingphawar* shaphang kaba Thep Mawbah. 15
4. *Either*. Write what you know from *Ki Phawer U Aesop* about U Bthong ha Sem Masi. 15
- Or*, Explain fully:—'Dei ha ki dykhot kiba ngi i tlot eh ba U Blei U la pynkup ka burom ba kynjai.'
5. Iathuh lyngkot ia u Jumai ha ka 12 tarik u 'nai Jylliew 1897 kumba thoh ha *Ki Dienjal jong ki Longshua*. 15
6. Explain fully with reference to the context:—'Ka jingkhiih u phlang ka pyni shano ka beh ka lyer.' 10
7. Write as essay on *one* of the following:—(a) The Shillong-Sylhet Road. (b) Perseverance. (c) A Khasi Festival. 20

GARO VERNACULAR

Paper-setter—MISS CHARLOTTE A. WRIGHT, B.A.

Examiner—REV. A. J. MERRILL.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Answer in Garo *four* only of the following questions:—40
 (a) Give briefly Eliphaz's first answer to Job when Job cursed the day of his birth.
 (b) Explain any *five* examples of faith given in Hebrews, chapter eleven.
 (c) Explain the qualities or attributes of love as given in 1 Corinthians, chapter thirteen.

(d) What was the year of jubilee (*jobelni bils'i*) and how was it observed by the Jews?

(e) Tell the story of the Frog and the Monkey (*Bengblok aro Makreni Kata*).

2. Expand or amplify *one* of the following into a paragraph:— 15

(a) Mande uidapaniko manoba aro aiao inmananirangko nikoba uarangko mandeskarangna parakatjaode mamung namgni ongja.

(b) Denggugipani tochri basik changan kimitako mana, aro uamangni nisiatani uamangni kosakona rebaa, ba Isol antangni kaonangao saknaako suala?

3. Translate into Garo the following passage:— 15

But how, you ask, can the camel live for so long without water? Very often, in the desert, the wells are three or four days' journey apart. And even when one is found, there may very likely not be sufficient water in it for the camels as well as for the men. Yet surely a camel must require at least as much water as a horse. How, then, can its wants be supplied upon a long desert journey?

Just in the same way that its need for food is supplied; for the camel can carry a quantity of water with it. But how? It does not possess a second hump which might serve as a kind of cistern. No; and yet it really has a kind of cistern in its body.

4. Explain in simple Garo the meaning of the following passage:— 10

Manmana parapara,
Adingchi chapa chapa,
Wagam wakengsisi,
Nachil matrengsi
Bisikkromna bak
Sadutangna jak.
Goera iako knae aganatjok,
Akkaruna kobokna, lau gonggedangna sma cha.

5. Write an essay of from 200 to 300 words on *one* of the following subjects:— 20

(a) The story of Ram and Sita.

(b) A short description of Japan under the following headings:—
(i) The scenery of Japan. (ii) The homes of the people. (iii) Their manners and customs.

(c) The history of the Red Cross, using the following headings:—
(i) Some countries it includes. (ii) Who compose the membership.
(iii) Some famous workers of the past and the present. (iv) What is being done by this organization in India.

(d) Your future occupation, under the following headings:—
(i) Explain what occupation you wish to follow. (ii) Why you have chosen this occupation. (iii) What preparation you intend to make.
(iv) What use this occupation will be to you and others.

PORTUGUESE VERNACULAR

Paper-setter and Examiner—DR. P. D. BRAGANCA CUNHA.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Write in your own words in Portuguese the meaning of the following verses:— 25

(1)

'A tirania ao fim pune o tirano.
Contra o injusto volta-se a injustiça.
E a maldade é aos maus que faz o dano.

(2)

'Arreda para longe ódio e cubiça;
Contra fero inimigo um bravo alento,
Contra amargura e dôr alma submissa.

2. Translate the following prose of Eça de Queiroz:— 25

Pois um rio de verde, manso, translucido, harmoniosamente estendido sobre uma areia macia e alva, por entre avoredos fragrantos e ditosas aldeias, não offereceria aquelle que o descesse n'um barco de cedro, bem toldado e bem almofadado, com fructas e Champagne a refrescar em gelo, um Anjo governando ao leme, outros Anjos puxando a sirga, mais segurança e doçura do que a Vida offerecia ao meu amigo Jacintho.

3. Write a short essay in Portuguese.— 35

'A pobreza de bens materiaes não é villeza, mas sim a pobreza de dignidade:'

4. Write short sentences in Portuguese, using the following words:— 15
viria, vir as boas, meçamos, vamo-nos, ouçam.

ALTERNATIVE PAPER IN ENGLISH

Paper-setter—MR. KUMUDBANDHU RAY, M.A.

Examiner—REV. C. E. ABRAHAM, M.A., B.D.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. *Either*, Write a short essay on *one* of the following subjects:— 20

- (a) Politeness.
- (b) Honesty is the best policy.
- (c) A journey by boat or train.

Or, Write a letter to your father, describing *either* (a) your preparation for the examination, *or* (b) your plans after it.

2. Choose *one* of the following passages, and (a) give the substance of it, and (b) express in a single sentence its main thought:— 14

- (i) Here's an example from
A Butterfly;
That on a rough, hard rock
Happy can lie;
Friendless and all alone
On this unsweetened stone.

Now let my bed be hard,
No care take I;
I'll make my joy like this
Small Butterfly;
Whose happy heart has power
To make a stone a flower.

- (ii) Alone on the shore in the pause of the night-time
I stand and hear the long wind blow light;
I view the constellations quietly, quietly burning;
I hear the wave fall in the hush of the night.

Long after I am dead, ended this bitter journey,
Many another whose heart holds no light
Shall your solemn sweetness hush, awe, and comfort,
O my companions, Wind, Waters, Stars, and Night.

3. Give the substance of *one* of the following passages bringing out clearly the main idea:— 14

(a) There is a perennial nobleness, and even sacredness, in Work. Were he never so benighted, forgetful of his high calling, there is always hope in a man that actually and earnestly works; in idleness alone is there perpetual despair. Work, never so Mammonish, mean, is in communication with Nature; the real desire to get Work done will itself lead one more and more to truth, to Nature's appointments and regulations which are truth. The latest Gospel in this world is, know thy work and do it. 'Know thyself'; long enough has that poor 'self' of thine tormented thee; thou wilt never get to 'know' it, I believe! Think it not thy business, this of knowing thyself; thou art an unknowable individual: know what thou canst work at and work at it like a Hercules! That will be thy better plan.

(b) One great cause of our insensibility to the goodness of the Creator is the very *extensiveness* of his bounty. We prize but little what we share only in common with the rest, or with the generality, of our species. When we hear of blessings we think forthwith of successes, of prosperous fortunes, of honours, riches, preferments, i.e. of those advantages and superiorities over others which we happen either to possess, or to be in pursuit of, or to covet. The common benefits of our nature entirely escape us. Yet these are the great things. These constitute what most properly ought to be accounted blessings of Providence; what alone, if we might so speak, are worthy of its care. Nightly rest and daily bread, the ordinary use of our limbs, and senses, and understandings, are gifts which admit of no comparison with any other. Yet, because almost every man we meet with possesses these, we leave them out of our enumeration. They raise no sentiment: they move no gratitude. Now, herein, is our judgement perverted by our selfishness.

4. *Either*, Expand the thought contained in *one* of the following passages, with or without reference to the poem in which it occurs:— 16

- (a) The beam of silver star
The ray of moon on high,
Are only the lamps that gleam afar
To show where dreamers lie.
- (b) An emerald is as green as grass,
A ruby red as blood,
A sapphire shines as blue as heaven,
But a flint lies in the mud.

Or, Select *one* of the following passages, and write in simple English the story contained in the poem from which it is taken:—

- (a) A chieftain, to the Highlands bound,
Cries, 'Boatman, do not tarry,
And I'll give thee a silver pound
'To row us o'er the ferry.'
- (b) Abroad on a winter's night there ran
Under the starlight, leaping the rills
Swollen with snow-drip from the hills,
Goat-legged, goat-bearded Pan.

5. Give in your own words a brief summary of EITHER (a) *The Lighted Candles*, OR (b) *The Bottle Imp*, from *Tales of Adventure and Imagination*. 20

6. Scan any *two* of the following passages, and discuss the figures of speech in the passages chosen by you:—

- (a) A child in the city,
So solemn and wise,
With dirt on its fingers
And dust in its eyes.
 - (b) When Mary goes walking,
The autumn winds blow,
The poplars they curtsy,
The larches bend low.
 - (c) Say not that beauty is an idle thing
And gathered lightly as a wayside flower
That on the trembling verges of the spring
Knows but the sweet survival of an hour.
-

TAMIL VERNACULAR

Paper-setter and Examiner—RAO BAHADUR L. K. ANANTHAKRISHNA IYER,
B.A., L.T.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. (a) Write short notes in Tamil on (i) தாடகாவுதம் 10
(ii) மாயமான (iii) அரககுமானிகை (iv) லிசவருபம் (v) நர்ணன
அழிவு.

(b) Write in Tamil a short account of the birth and 5
career of கர்ணன், and அபிமனனியு.

(c) What was the cause of the Pandavas' going to 5
the forests (வனவாசம்) ?

2. “ வினூரா வில்முறித்தல் ”. இதற்குக் காரணமென்ன ? 10

3. Give briefly in Tamil the substance of *Sakala Kata* 10
Valli Malai. Who is the author of this work ?

4. Give in plain Tamil the meaning of the following
verses :—

(a) கங்கையு மதியும் பரம்புங் கடுககையு முடிமேல் வைத்த 5
வங்கண ரோலை காட்டி யான்டவர் தமக்கு நாடு
மங்கையர் வதனசீத மதியிரு மருங்கு மோடிச்
செங்கல் குழைகண்டுந் திருமுனைப் பாடிநாடி

(b) வேங்கை வரிப்புலிக்குத் தீர்த்த விடதாரி 5
அங்கதனுக் காகார மாணற்போல்—பாங்கறியரப
புல்லறி வாளர்க்குச் செய்த வுபகாரம்
கல்லின்மே லிட்ட கலம்

(c) மானங் குலங்கல்வி வீணமை யறிவுடைமை 5
தானந் தவமுயர்ச்சி தானாண்மை—தேனின்
கசிவந்த சொல்லியர்மேல் காமுறுதல் பத்தும்
பசிவந் திடப்பறந்து போம்.

5. Translate into Tamil any two of the following passages :— 15

(a) Of the five Indian companions travelling in the same compartment three were killed, one was very badly injured, the other, who was on the upper berth, was slightly hurt. Mr. Richards received cuts on his arms and legs, but was able to go to Calcutta after they had been attended to.

(b) It seems that it was his servant who first discovered his absence. He went to bed, at about one o'clock on that fateful night. Before doing so he made everything ready in his master's sleeping-room and left lights there.

(c) It seems that about eight the next morning, the man went to his master's room to prepare the bath and lay out clothes. Much to his surprise, he found the door just as he left it, the lights still going, and the bed untouched. He thought that the master was asleep.

6. Write a letter in Tamil to your guardian *either* (a) about the weather at Calcutta during the month of May, *or* (b) on the progress of your studies.

15

7. Explain in Tamil the following quotations with examples.

(a) கற்றவர் கற்றவரோடும், மூடர்மூடரோடும் சிநேகஞ் செய்வார். 5

(b) வஞ்சகர் மறைந்தொழுகுவார்; வஞ்சனை இல்லார் வெளிப்பட்டொழுகுவார். 5

(c) துஷ்டர்களுக்கு உபகாரஞ் செய்தால் கேடுவரும். 5

MALAYALAM VERNACULAR

Paper-setter & Examiner—RAO BAHADUR L. K. ANANTHAKRISHNA IYER,
B.A., L.T.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. (a) “ജ്ഞാനപ്പാന” “ഗ്രാമീണകന്യാക,” ഈ 5
പദ്യങ്ങളുടെ ഗ്രന്ഥകർത്താക്കന്മാർ ആരാകുന്നു?

(b) ഈ കവികളുടെ ജീവചരിത്രത്തെ പറ്റി ചു 10
രേഖയായി എഴുതുക.

2. താഴെ എഴുതിയ പദ്യങ്ങളെ സ്വന്തമലയാ
ളത്തിൽ വ്യക്തമായി എഴുതുക.

(a) അന്നു ഭോജനത്തിനാഗ്നിക്കിതു നിക്ഷാഭിയും 5
തന്നുടെ തനയന്മാരഞ്ചു പേരൊടുംകൂടി.
മദ്യപാനവും ചെയ്തങ്ങവരുമുറങ്ങിനാർ,
ശക്തനാം ഭീമൻ വിചശോധന ചെയ്യാൻ
മുമ്പെ.

(b) മാതൃലാഭ മമ മഹിതലപാലൻ 5
കൌതുകാഭിഹ ഭവാനെയയച്ചു
കൈതവാർമ്മക മിതെന്നു പരാമൊ?
ഹേതുവെന്തതിനു ചിന്തയു സാധൊ.

(c) ഒന്നുമെനിരുപിച്ചാൽ ആവതല്ലാതെയുള്ള 5
 ഭുന്ന്യമേദമവർ ചെയ്തു സങ്കടത്തിങ്കൽ
 ഈശ്വര മതമെന്തെന്നറിഞ്ഞുകൂടായുയാൽ
 വിശ്വസിച്ച്ചെല്ലാൻ കേൾക്കേണമെന്നെൻ
 വാക്യം.

(d) മഞ്ഞിൻ കണ്ണം ചാർത്തി മരങ്ങൾ തോറും 5
 തട്ടിത്തടഞ്ഞൊത്ത വിഹംഗനാദം
 പാടെ ചരിക്കുന്നു കൃഷ്ണവലന്റെ
 കിട വിനോദൊത്ത വിഭാഗവാത്.

3. “ജ്ഞാനപ്പാന” ഈ പട്ടത്തിന്റെ സാരം 5
 ശത്തെ ചുരുക്കമായെഴുതുക.

4. പരസ്పരസഹായ സംഘങ്ങൾ കൊണ്ടുള്ള ഗുണങ്ങൾ 10
 ഒരു വിവരിച്ചെഴുതുക.

5. ഏറ്റക്കുളുടെ ഉൽപത്തി എങ്ങിനെയെല്ലാമാണെ 10
 ന്നു വിവരിച്ചെഴുതുക.

6. Translate one of the following passages into Malayalam :—

(a) When the world was first made, there was only water with a great rock in it. A man and woman were on the rock. The man and the woman were dirty, and went down to bathe in the water. When they bathed, the dirt rolled off from their bodies. They smelt the dirt which came from them, and the man said, 'This will become land', and it became land. 15

(b) Long ago there was a house in which lived a man and his wife. Near the house was a tree. Whenever fruit fell from the tree, the man and his wife heard a noise like that of a child weeping. His wife was afraid of the sound of crying, and the man came down from the house. But he saw only the fruits which had fallen to the ground. One of these he cut with his knife, and again he heard a sound of weeping. So he cut it into two. 15

7. Write in Malayalam a letter to a friend on one of the following subjects :— 20

- The choice of a profession.
- The advantages of travelling.

8. താഴെയുള്ള പദ്യത്തിന്റെ സാരം വിശദമായി എഴു 10

തുക.

നാട്ടു പ്രധാനം നഗരം ഒരിടം
നാട്ടിൻ പൂറം നമ്മകളാൽ സമൃദ്ധം
കാട്ടിനകത്തോ, കടലിനകത്തോ
കാട്ടിത്തരുന്ന വിധിരത്നമെല്ലാം.

MODERN ARMENIAN VERNACULAR

Paper-setter—MR. M. J. SETH, M.R.A.S.

Examiner—MR. ZEBEDEE HNANIAN.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into Modern Armenian :—

30

France has been the refuge and the safe haven of oppressed and persecuted Armenians during the last 650 years, for it may not be generally known, but it is nevertheless a historical fact, that the last Armenian king, Leo XI, of the house of Lusignan, died a refugee at Paris in 1393, having been driven out of his kingdom in Cilicia by the terrible Mamelukes of Egypt in 1375. After his release from captivity in the land of the Pharaohs, through the kind intercession of King John of Spain, Leo XI visited Rome, Spain, France and England, in the vain hope of enlisting the sympathy of Christian Europe with a view to regaining his lost throne, but evidently the spirit of chivalry, which was once the proud heritage of Christian Europe, had died with the Crusaders, and the appeal of the last Armenian king, an exile amongst mighty Christian kings, fell on deaf ears, and he died a broken-hearted man in Paris and was buried amongst the kings of France.

2. Compose short sentences in Modern Armenian to illustrate the use of the following words:—(a) Իտալիոն

- (b) միասնորակ; (c) Գաղափարապաշտ;
(d) միասնակերպ; (e) միաստիպար; (f) Զակատագրական;
(g) միահորով; (h) Խանդավառ; (i) Խնդիր; (j) Խիստ.

3. Write an essay in Modern Armenian on any *one* of the following subjects :— 40

- (a) Հնդկահայոց անցեալն, ներկայն և ապագայն.
- (b) Սեբաստիա թաղիադեանցի գրական 'Վորժուկեան թիւնը.
- (c) Սարգսիսիական ճամբարանի դերը Հնդկաստանում.
- (d) Հայաստանի անկախութեան պատմութիւնը.

4. Write from memory the Armenian National Anthem— 10
Տէր կեց'ն զՀայս and say who was the author of that anthem.

BURMESE VERNACULAR

Paper-setter—MAUNG BA, B.A.

Examiner—PROF. PE MAUNG TIN, M.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. ကင်းဝန်မင်းကြီးသည် ပါရဂူ ဖြူတော်၏ အကြောင်းနှင့် ပါရဂူ 10
 ဖြူတော် သို့ရောက် စဉ်အခါက အဖြစ် အပျက် များကို၊ ပြင်သစ် နိုင်ငံ
 သွားနေစဉ်မှတ်တမ်းတွင် မည်ကဲ့သို့ရေးသားထားပါသနည်း။

2. အောက်ပါ စာပိုဒ်ကိုသည့် မည်သည့် စာကိုယ်၌ပါရှိသနည်း။ 20
 စကားစပ်နှင့်တကွ အဓိပ္ပာယ်ဖော်ပြပါ။

(က) ဆယ်ရှစ်ခေါက်ရက်မက်ကို၊ တောတောင်ထက်ချီကွပ်၊
 တရပြင်းအကြပ်၊ ခြံရံသည့်အထပ်မှာ။ ပေါရိသဒ္ဓါအသင်း၊ သုတ
 သောမ၊ လောင်းဗုဒ္ဓကို၊ လက်ရကျင်းသည်နှယ်၊ မင်းမိကဉ္စ၊ ထုံပြာ
 ပြာကို၊ အပါလက်တွင်း၊ အောင်မြေထိုင်းတော့မည်။ အင်ကြင်း
 ပင်စည်၊ လှမ္မနီဥယျဉ်တွင်၊ သဗ္ဗညုထွဋ်ထင်၊ ဖြတ်မယ်တော်ဝမ်း
 ထိုက်တွင်၊ စွဲသန္ဓေအဝင်ကို၊ အင်ကြင်းပင်ကိုင်းခက်၊ ကိုင်ဆဲတော်
 မူလျက်၊ ရွှေကိုယ်တော် ကြာဝတ်တွင်းက၊ ဆင်းယျောကာသက်
 သည်နှယ်၊

(ခ) နှစ်သက်ဖွယ်ထွင်၊ အာရုံမြင်က၊ မဆင်ခြင်စောက်၊ ကျွန်
 ငါးယောက်တို့၊ မှားရှောက်သောအား၊ သက်ဆုံးပါးလည်း၊ မင်း
 သားဘုန်းမိုင်၊ ဆင်ခြင်နိုင်၍၊ မဆိုင်ရာဝယ်၊ ပြည်ကြီး လယ်တွင်၊
 စမ္ပယ်မြှောက်ပြီး၊ ထွက်ဝင်တီး၍၊ ရွှေထီးရတနာ၊ ဆောင်းသူးပါ၏။

3. “ရှေ့ ဖြစ် မိုး” ဝတ္ထု ဟု သောအမည် ပေးခြင်း၏ အကြောင်း 10
ကို ထုတ်ဖော်ရှင်းလင်း ဖြေဆိုပါ။

4. (က) အဘသ်သူ့ ကြောင့် ကျောက်သင်ပုံး ကွဲသွားသထဲ။ 10

မြင်းဖြူ နယ်၌ အဘယ့်ကြောင့် မိုးခေါင်သထဲ။

အထက်ဖော်ပြရာပါ ဝါကျများကို၊ ပြောင်းထဲ၍၊ “ကြောင့်” ဟု
သောစကားမပါဘဲ အဓိပ္ပာယ်တူဝါကျ အသစ်ရေးပါ။

(ခ) မပုသည် ငါးရောင်းခြင်းဖြင့် အသက်မွေးသည်။

မောင်ခသည် စာသင်ရန် ကျောင်းသို့လာသည်။

အထက် ဖော်ပြရာပါ ဝါကျတို့တွင် ကြိယာကို ကိတ် နှစ် အဖြစ်
ပြောင်းထဲ၍ အဓိပ္ပာယ်တူဝါကျ အသစ်ရေးသားပါ။

5. အောက်ပါလင်္ကာ စာပိုဒ်၏ အနက် အဓိပ္ပာယ်ကိုရေးသား 15
ဖော်ပြပါ။

ဤသို့များစွာ၊ တတ်စရာကို၊ လှည့်ကာဆိုမှ၊ မိနှင့်တစ်၊ ကြီးထွ
ကျေးဇူး၊ သင်ပေဘူးကို၊ အထူးပြုမိ၌၊ နားနာမိ၌လေ၊ နှစ်ထိန်းလေး
သောင်း၊ ပေါင်းသည်၍ပြေ၊ ထူးထူးထွေလည်း၊ စိမ်းရွှေထွေးထွေး၊
ဝါးရွက်လားသို့၊ ကျယ်များစကြဝလာ၊ ကြီးရောလည်း၊ အပ်မှာနှမ်း
တွင်း၏လားနှင့်၊ မပြားပုံဆို၊ တောင်မြင်းမိရ်လည်း၊ နွားချိုပေါက်စ၊
ပမာကျ၏၊ နက်လှစွာရှောင်း၊ ရှစ်သောင်းလေးတောင်၊ ရေတောင်
တောင်နှင့်၊ ထဲချောင်သမုဒ္ဒရာ၊ ရေများစွာလည်း၊ ပမာမလောက်၊
မိလ်းရေပေါက်သို့၊ အုံလောက်အရာ၊ မိမာတာနှင့်၊ စိတာအား
ဖြတ်ဂုဏအား၊ ဆင်ငြါးပါလို၊ မိကိုလက်၊ သမ္ဘာလက်ဝဲ၊ အမြဲတမ်း
လျက်၊ ပရ်းထက်တွင်၊ သိုဝင်နိစ္စ၊ ထုပ်ကြွေးကြသည်၊ ရှေးကပြဘူး၊
ဇေးကျေးဇူးကို၊ အထူးပြုမိ၌၊ ခဆပ်နှိုင်းတည့်၊ အပိုင်မည်ကြောင်း၊
တရားကောင်းကို။ ။ ညီကောင်းနားဝယ်မိမိလေလော။

6. Translate into Burmese :—

15

When I was a little advanced into the island, I saw an old man, who appeared very weak and infirm. He was sitting on the bank of a stream, and at first I took him to be one who had been shipwrecked like myself. I went towards him and saluted him, but he only slightly bowed his head. I asked

him why he sat so still ; but instead of answering me, he made a sign for me to take him upon my back, and carry him over the brook. I believed him really to stand in need of my assistance, took him upon my back, and having carried him over, bade him get down, and for that end stooped, that he might get off with ease ; but instead of doing so, the old man, who to me appeared quite decrepit, threw his legs nimbly about my neck. He sat astride upon my shoulders, and held my throat so tight that I thought he would have strangled me, and I fainted away.

၇. အောက်ပါအကြောင်းအရာကိုစာဖတ်ရေးသားပါ။

ကျန်းမာရေးအကြောင်း

ကျန်းမာခြင်းသည် ပညာပညာရေးကြံ့ကြောင်း-မကျန်းမာခြင်းကြောင့်မည်ကဲ့သို့မျှတုံ့ပြန်အထိဆန္ဒမပြည့်နိုင်ခြင်း-ဒုက္ခရောက်ရခြင်း-ကျန်းမာရန်လိုက်နာအပ်သောအချက်များ-ကိုယ်စက်တုပ်ရှားခြင်း-ရှုရှိုက်သောလေ-အသုံးပြုသောနေရာနှင့်အဝတ်အစားအဆီအနံ့အဆောက်အဦများ-သန့်ရှင်းရမည်ဖြစ်သောအကြောင်းများ-စိတ်နှလုံးကြည်လင်စေခြင်း-အထုပ်အကိုင်ကိုချင့်ချိန်၍ပြုလုပ်ခြင်း-အရပ်ဒေသသည်မိမိနှင့်ရာသီအလိုက်သင့်မသင့်-ကျန်းမာခြင်းသည်မညာရခြင်း၊ ဥစ္စာရခြင်း၏အကြောင်းဖြစ်၏-လပ်ကြီးတခုဖြစ်၏။



TELUGU VERNACULAR

Paper-setter and Examiner—DR. B. RAMCHANDRA RAU, M.A., PH.D.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate the following passage into idiomatic Telugu :— 25

The Dipavali holidays sent a thrill of joy into every heart. The rains were satisfactory : it was a 'bumper' harvest. The villagers were busy with various harvesting operations. The womenfolk moved merrily helping their men. Round about the village of Vadod were seen heaps of new corn. It was a scene of happiness and joy. The farmers were delighted to see the fruits of their hard labour ; the women were full of joy at the prospect of getting new clothes and ornaments. Jago Patel's whole family was working hard and sharing in the merriment. It was a fine winter morning. The beautiful heap of new millet was shining in the sun. Just then, the devil entered his mind : Ah ! we toiled hard ; this hard labour.....day and night... in and out of season. And this Durbar will take away his share without any trouble.

2. సత్య హరిశ్చంద్రుని యొక్క వృత్తాంతము వ్రాయుచు 20
మీరెట్టి నీతులు గ్రహించ గలరో వ్రాయుడు.

3. చ్యవన మహాముని యొక్క పూర్వ వృత్తాంతము విశద 20
ముగా వ్రాయుడు.

4. ఈ క్రింది లోకోక్తుల కర్థము వ్రాసి మీ స్వంత మాటలందు 10
పొందు పరచుడు.

(a) “ అందిన సిగ మరియు దకున్న గాట్లు.”

(b) “ అందఱితో చావు పెండ్లితో సమానము.”

(c) “ కవి గాంచని చోరవి గాంచును.”

(d) “ కాలు జాతిన నగవారు కారె యొరుబ.”

5. “ సత్యము ” గురించి నొక వ్యాసము వ్రాయుడు. 25

MODERN TIBETAN VERNACULAR

Paper-setter and Examiner—DR. SATKARI MUKHERJEE, M.A., PH.D.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate the following passage into Modern Tibetan:— 40
The battle raged 'loud and long' at Gheria in 1740 between Sarfaraz Khan, Nawab of Bengal, who would not give up his vice-regal throne, and Muhammad Ali, whom the Emperor of Delhi, displeased with Sarfaraz Khan, had nominated to it. Sarfaraz fought like a lion But his days were numbered; he was killed in the fight.

It is not, however, of him that I meant to speak. The subject of the story is Jalim Singh, son of Bejoy Singh, a Rajput Captain in Sarfaraz Khan's army. Jalim was only nine years old, but, like Casabianca, he was 'a creature of heroic blood'. He had accompanied his father to the field and rode his small pony behind him, his small sword girt on and his small lance held in his grip in imitation of his father. He was having his 'baptism of fire'. When his father fell fighting in the rear and the enemy surrounded him to rob him, Jalim sprang down and stood by his dead father's side, and brandishing his tiny sword—his eyes emitting sparks of fire—cried out at the top of his little voice, 'No Musalman touches my father's body. He dies who approaches it!' Muhammad Ali himself was among those who heard this challenge. He looked at the little hero, and his heart overflowed with admiration. 'Don't touch the dead man', cried he to all about him, 'nor his son'. And presently, coming up, he bowed his head to the noble boy and said, 'Sheathe your sword; for I, Muhammad Ali, assure you that no Moslem shall touch your father's body, but it shall be borne in all honour by some Rajputs in my service and cremated on the bank of the Ganges according to your Hindu rites. And, my little hero, if you will have me for your protector and father now that your own father is gone, you are thrice welcome.'

Nothing, however, is known of the subsequent development of so much promise.

2. Give a short summary of the life of *Dri-med-kun-ldan* and his gifts and charities in your own language. 15

3. Correct the errors in the following:—
ཀླུ་པོའི་གསོད་རྒྱུས་ 5
དང་འབྲུ་ཕྱོད་པ་ཀླུ་པོ་ལས་ཀྱང་འབྲིས་སྤྲུག་པ་དང་བརྒྱུས་པར་གྱུར་ཏོ།

4. Conjugate the following roots in all the tenses:— 10
འབྲུག་པ། གསོད་པ། འཕྲུག་པ།

5. Write an essay in Modern Tibetan on any *one* of the following subjects:— 30

- (a) Industry is the mother of success.
- (a) The principal trades of Tibet.
- (c) The chief festivals of Tibet.

LUSHAI VERNACULAR

Paper-setter—REV. E. L. MENDUS, B.A.

Examiner—REV. DAVID EDWARDS, B.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. A engomaw zawk zawk ah hian essay ziaak rawh :— 20
 - (a) Lebkha thiamna (*Education*) hian mizo ram hnam nundan leh mimal nundan a khawihzia.
 - (b) Kristiana vanram kawng zawh bu thu atanga nunchang atan a thil zirturte.
2. Heng thu lak chhuah zinga i duh duh panga chauh te chu hrilfiah la ; khawihmunah nge, tuin nge, tu hnenah nge sawi an nih, ti lang baw la :— 20
 - (a) 'Ephesi khuaa mi Diani ropuitak a ni.'
 - (b) 'He kutte hian keimah leh ka thiante chakkhai a deh chhuah thin.'
 - (c) 'I chhiar kha a awmzia i hria em ?'
 - (d) 'Tangka leh rangkachak engmah ka nei lo, nimahsela ka neih chhun ka pe ang che.'
 - (e) 'Tho la, kawthlér Ngil an tih ah chuan kal la.'
 - (f) 'Rei lo të chauh thlèma Kristiana mi siam i tum a nih hi !'
 - (g) 'He mi kamtam hian engnge sawi a tum ?'
3. I duh zawk zawk chhang la :— 10
 - (a) Engvanginngé Paula leh Barnaba kha, Pathianthu hrila an vah hmasak ber tawp lamah kha Jerusalem an kal tak kher ?
 - (b) Paula zin tum hnihna thu kha tawideuhvin sawi la.
4. Heng khua theuhva cheng Paula thian mi pakhat hming chauh zél sawi la ; tin, heng Paula thiante zing atang hian, i duh duh mi pahnih chanchin i hriat angin sawi baw la : Philippi, Lustra, Korinth, Damaska, Thessalonika. 10
5. Paulé leh John Bunyana an pian thar hma chanchin leh khawsak dan i hriat zawk zawk tawi deuhvin sawi rawh. 10
6. Heng atang hian i duh duh pahnih, i hriat angin sawi rawh : Thlèmsama, Danhriaa, Pathianthuhritua, Khawvelthilafinga. 20
7. Sihal leh choak Thawnthu omaw Chninghnia leh Beram No Thawnthu omaw ziaak chhuak rawh. 10

SINHALESE VERNACULAR

Paper-setter—REV. P. SEELANANDA.

Examiner—MR. DEVAPRIYA WALI SINHA, B.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into Sinhalese :— 20
 - (a) At seven o'clock this evening, being the seventh of December, I imagine I see you in your box at the coffee-house. No doubt the waiter, as ingenious and adroit as his predecessors were before him, raises the tea-pot to the ceiling with his right hand.

(b) Now books of this kind have been written in all ages by their greatest men: by great leaders, great statesmen, and great thinkers. These are all at your choice and life is short. You have heard as much before: yet have you measured and mapped out this short life and its possibilities?

2. Explain the "Coming of Vijaya" according to "Lanka Katha". 20

3. Write an essay on *one* of the following subjects:— 20

- (a) Sir Asutosh Mukherji, Kt.
- (b) Mahatma Gandhi.
- (c) Physical and Moral Courage.

4. Explain the following:— 20

මහනුන් හසල නමහට යස පිහිටලෙ ස
නියනින් නොහල සුතුබව පැවිණිත වෙනෙ ස
සුදනන් පැවැති සිරිතැයි දන්වන මල ස
ත්‍රුමින් සමග ගෙවුනෙය දහවල් දව ස.

5. Explain in your own words the following stanzas:— 20

මතුරු තුමෝ දුක්සැප දෙකෙ හිම පවැ නි
බිතු සිතුවම් රුමෙන් පිටු තොපා වි නි
සුතු මතු වැඩ මනෙපල එවැනි ගුණ ඇ නි
සිතු නතැ කැරැ අස යහලුව වසනරු නි.

එනිරිඳුගෙන් මහ රු
ලත් අනභි සිටු නනතු රු
ගස දස දිගනැ පි රු
අතේ පිටු සිටු තුවැ පින් ස රු.

සිවු පණස් කෙල ද න
විසදවිකර ගණන් දු න
කරවු නිසි ලෙසි න
පතර තුගු පහපෙළින් බබල න.

GUJARATI VERNACULAR

Paper-setter and Examiner—MR. HARGOVIND DAS SETH.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

(સવાલોના જવાબ ગુજરાતીમાં લખવા.)

1. નીચેના મથાળાવાળી વાર્તાઓમાંથી એકને તમારા પોતાના શબ્દોમાં 20 લખો :—

- (ક) સાચો છોકરો.
- (ખ) શેક અને મોચી.
- (ગ) પક્ષીઓ ને જળ.

2. નીચે ઉતારેલી કડીઓનો અર્થ લખો અને તે તમારા પાઠ્યપુસ્તકમાં 15 કથે સ્થળે આવેલ છે તે જણાવો :—

- (ક) એકલું કર્મ તે જીતે કોઈ, જૂઓ વાત વિચારી લોક ;
કર્મ વિના ઉદ્ધમ નવ મળે, ઉદ્ધમ કરતાં કર્મજ ફળે.
- (ખ) સુરખી પેટમાં પય તેમાં ધૂત, તેથી પુષ્ટિ ન પામે ગાય ;
દોહી મથી માંખણ તાબ્યે, સર્પિ બક્ષણ સુખદાય.
- (ગ) એ સહુ આવરણોને તોડો, એ માયાને પરી કરો ;
હિત ને હિતનાં સાધન શાશ્વત, સ્વચ્છ લોચને ઉરે ધરો.

3. નીચેના શબ્દોનો અર્થ લખો અને તે દરેકને તમારા પોતાના 10 બનાવેલા જુદા જુદા વાક્યોમાં વાપરી દેખાડો :—

મુખારવિન્દ, સમરાંત્રણ, અહોનિશ, સ્વાભાવિક, દમ્બતી.

4. નીચેની કહેવતોનું તાત્પર્ય સ્પષ્ટ રીતે સમજાવો:—

10

- (ક) અધૂરો પડો છલકાય.
- (ખ) ઠાલી વાસણ બહુ ખોલે.
- (ગ) ખોદે તે પડે.
- (ધ) કરે તેવું પામે.
- (ડ) વાવે તેવું લણે.

5. “દુઃખ નીચેનાનાં ભેવાં; ગુણ ઉંચેનાના ભેવા; સુખ-દુઃખની નીસરણીમાં આપણી પાછળ ફેટલા બધાં અને સદ્ગુણની નીસરણીમાં આપણી આગળ ફેટલા બધાં એ ભેડું. બીજાનાં દુઃખ ભેઈ આપણા સુખ માટે પ્રભુનો આભાર માનવા, બીજાના સદ્ગુણ ભેઈ આપણી ખામી માટે પ્રભુ આગળ શરમાવું.”

ઉપલો ફરો તમારા પોતાના શબ્દોમાં સમજાવો.

6. નીચે લખેલા વિષયોમાંથી એક પર આસરે બે પાનાં લેટલો 20 નિબંધ લખો:—

- (ક) ગ્રામ્ય-જીવન.
- (ખ) પુરતકાલય.
- (ગ) સાદો ખેરાક.

7. ગુજરાતીમાં તરબુતો કરો:—

15

In the age when men enjoyed extraordinary longevity, the ancient capital of the kingdom of Kānyakubja was called Kusumapura. The king was surnamed Brahmadatta. Thanks to the virtue and wisdom which he had possessed in his former existence, he was endowed this time with great civil and military talents. His power caused all India to tremble, and the renown of his name caused terror among the neighbouring kingdoms. He had many sons, full of sagacity and bravery, and many daughters of charming beauty.

ORIYA VERNACULAR

Paper-setter :—Mr. KASINATH DAS, M.A.

Examiner :—Mr. MAHESWAR DAS, M.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into Oriya :—

15

Once in a certain country there lived two brothers who were twins and heirs to the throne over which their uncle ruled. The twin brothers, who loved each other dearly and had been together ever since their birth, married twin sisters of noble birth, and shared between them a princely dwelling. A very paradise on earth their dwelling seemed to them when to each of the brothers a sturdy little son was born, for then they thought their cup of happiness full to overflowing. But all of a sudden sorrow and suffering came to those they loved, for one day the twin brothers went to bathe in the river, and before either of them realized it, the weaker of the two was out of his depth.

2. Combine the following short sentences into one simple sentence :— 10

- (a) ଏକ ଦାନବପତି ଗୋଟିଏ ମୃଗକୁ ଦେଖୁଥିଲେ ।
 (b) ଉକ୍ତ ମୃଗର କେହି ସହାୟ ନ ଥିଲେ ।
 (c) ଉକ୍ତ ମୃଗ ଯୁଥୁଡ଼ିଆ ହେଲା ପରି ବୋଧ ହେଉ ଥିଲା ।
 (d) ଉକ୍ତ ମୃଗକୁ ରଜପୁତ୍ର ଶାସ୍ତ୍ର ବାଣ ଦ୍ଵାରା ହତ କରୁଥିଲେ ।
 (e) ଉକ୍ତ ମୃଗ ତତ୍ତ୍ଵଶାତ୍ର ପ୍ରାଣ ହରାଇଥିଲା ।

3. Explain in simpler Oriya either Group A or Group B.

25

GROUP A

(i) ସାହିତ୍ୟିକସ୍ତମାସପରିଧି ଛୁଦ୍ରଧରଣୀବାସୀ ମନୁଷ୍ୟ, ଶରୀରସମ୍ପର୍କରେ ଇତର ଜୀବମାନଙ୍କ ପରି ସ୍ତୁତ୍ ହେଲେହେଁ ମନଃ ସମ୍ପର୍କରେସ୍ତୁତ୍ ନୁହେଁ । ତାହାର ବୁଦ୍ଧି ଓ ବିବେକ ଛୁଦ୍ରସଂସାରର ସାମା ଲାଘନ କରି ଅନନ୍ତ ଏବଂ ଅସୀମର ଅଭିମୁଖରେ ନିରନ୍ତର ଅଗ୍ରସର ହେବା ନିମିତ୍ତ ଉନ୍ମୁଖ ରହି ଅଛି ।

- (ii) ନିୟତି-ଗତି ଅଦା କୁଟିଳା ଅତି,
ପ୍ରାଣି-ପୀଡ଼ନେ ତାର ଉତ୍ତଟ ରତି ।
ଅଜର ମିତ୍ର କାଳି ବିଷମ ଅର,
କାଳଚକ୍ରର କ୍ଷୁର ଗତି ଏପରି ।
ଅଜି ଯେ ସୁଖସୁ ଧାକରେ ବର୍ଷଣ,
କାଳି ସେ ଦୁଃଖ କାଳକୃଟ କାରଣ ॥

GROUP B

(i) ଶରତର ପୁତ୍ରଚନ୍ଦ୍ରାଲୋକରେ ଶୀତଳ ନୈଶ-
ସମୀରଣ ପ୍ରବାହୁତ ବର୍ଷାସଲିଳପୁଷ୍ପ ରଙ୍ଗିଣୀଦୁଲର ସୁକୋମଳ
ସୌଭରରେ ଶାରଦଲକ୍ଷ୍ମୀଙ୍କର ଉଦ୍ଘୋଷନ-ଆଭାସ ଅନୁଭୂତ
ହେଉଥିଲା । ସୌନ୍ଦର୍ଯ୍ୟର ପଦମୂଳରେ ଅକପଟଭକ୍ତିର ସ୍ଵାର୍ଥ
ଗଜସ୍ଥାନ ନିଷ୍ଠାକ୍ଷ ସ୍ତୋତ୍ର ନିଜ ଅଜ୍ଞାତ ସାରରେ ବାହାରବା
ସ୍ଵାଭାବିକ ॥

- (ii) କାଳବଳେ ଯାହା ତେଜ ଯାଇଛି ସସାର,
ଅଞ୍ଜଳ ବିଦେଶେ ମନ ପାଏ ରେଟେ ତାର ।
କିନ୍ତୁ ସେହି ସ୍ଵଭାବରେ ଚର୍ଚ୍ଚି ସେ ମନୁଅ,
ଫେରିଆସି ସସାରକୁ ହୁଏ କୁଅରୁଆ ।

Derive ନିଷ୍ଠାକ୍ଷ a. d ମନୁଅ in the above passage. 5

4. (a) Give in your own words the summary of *either* ବସନ୍ତ in Rutuchitra
or Navavarshābhavānā in Nirjharini. 10

(b) Give the idea of the following in simple Oriya :—

15

କର୍ମହୁଁ ଶରୀରର ଉପଯୁକ୍ତବ୍ୟବହାର । କର୍ମବଳରେ
ସକଳ ଦୁଃଖହର୍ତ୍ତାକ ଦୂରହେବ, ସୁଖଶାନ୍ତି ମିଳିବ । ଖେଳବା
ବେଳେ ସମସ୍ତଙ୍କର ଜିଣିବାକୁ ଇଚ୍ଛା ହୁଏ ; ଅନେକେ ହାରିଗଲେ
ଉଦ୍ୟକ୍ତ ହୁଅନ୍ତି । ଖାବନ ଏକ ଘର ଶ୍ରୀତାକୁମ୍ଭି । ମାନବ
ଏଥିରେନୁତନ , ଖେଳ ଖେଳୁଛି-ଭଲ , କର୍ମହାତରେ ନେଉଛି ।
କୁଏହି କର୍ମସୁତ୍ରକରେ ସେହି ଶ୍ରୀତାର ଅସ୍ତ୍ରତ ରଖିବା ହେବ ।

ତାହା ଦେଲେ କର୍ମ ଯେତେସାମାନ୍ୟ ଦେଉ ପଛକେ ସେଥିରୁ
ଅମୃତସୁବିକ, ଜୀବନ ସରସ, ମଧୁମୟ ଦେବ । କର୍ମସକାଶେ କର୍ମ
ବାସ୍ତବିକ ମୁକ୍ତି ।

1. Write an essay on any one of the following :—

20

- (a) The natural scenery of any part of Orissa.
- (b) The summer season.
- (c) Health is wealth.

KANARESE VERNACULAR

Paper-setter and Examiner—MR. P. APPAJI RAO, B. SC.

Candidates are required to give their answers in their own words in Kanarese as far as practicable.

The figures in the margin indicate full marks.

1. Translate into Kanarese the following :—

15

At Medina he resolved to spread his new religion by the power of the sword, and collecting a large army about him, he went to and fro, making war on all who would not join his standard. He attacked cities and caravans on the road, until at last, after some years, Mecca itself fell into his hands. Mohammed believed that he was sent to teach a more perfect faith than the Jewish and Christian religions, and that he ought to force it upon the whole world. He now sent letters to the kings of the earth, calling upon them to accept the new faith. The King of Persia replied that he would put the Prophet in chains whenever he could find time to lead an army against him. The Emperor of the Roman Empire made no reply to this demand, but, we are told, sent him a small present. Mohammed died about eleven years after the *Hegira* without naming a successor, and he left no son.

2. Write an essay in Kanarese on any one of the following :—

20

- (a) Describe any public garden you have seen.
- (b) Some of the roads lead down and down,
But follow the roads that climb,
And nought shall sever your joy for ever,
From now to the end of time.
- (c) Housekeeping—an art which every girl ought to be taught—mothers and mothers-in-law as models—sisters and other relatives as critics.
- (d) Fashions—their uses and abuses—their effect on rich and poor—national characteristics are depicted.

3. ವರ ವರ್ಣದಿಂದ ಶೋಭಿತವಾಗಿ ರೂಪ ವಿ ।

ಸ್ವರದಿಂದ ಚೆಲ್ವಾಗಿ ಮಧುರತರ ನವ ರಸೋ ।

ದರ ಭರಿತದಿಂದ ವಿಲಸಿತವಾಗಿ ಸುಮನೋನುರಾಗದಿಂ ಪ್ರಚು
ರವಾಗಿ ॥

ನಿರುತ ಮಂಜುಳ ಶಬ್ದದಿಂದ ಕಿವಿಗಿಂಪಾಗಿ ।

ಚರಿಸುವ ಸುಲಲಿತ ಪಟ್ಟದಿಗಳೆಡೆವಿಡದೆ ರೋಂ ।

ಕರಿಸದಿವನೇ ಬಂದು ನೆರೆದ ವಿದ್ವತ್ಸಭಾ ನೀರೇರುಹಾಕರದೊಳು ॥

Write the above in prose order and explain briefly 15
any important words and phrases.

4. Develop the ideas contained in the following:— 10

(a) ರಸಮಂ ನಾಲಗೆ ಕವಿತಾ ।

ರಸಮಂ ಕವಿ ಕುಸುಮ ರಸಮನಳಿ ಮಾಳೆ ಸುಧಾ ॥

ರಸಮಂ ಸುರರಕ್ಷಯ ಸುಖ ।

ರಸಮಂ ಪರಮಾತ್ಮ ನರಿವನುಳಿದವರರಿಯರ್ ॥

(b) ಅವನ ಕಥೆ “ಎಳೂ ಹನ್ನೊಂದೂ” ಅಗಿ ಹೋಯಿತು.

5. Write the history of Satyavān and his rescue from Yama. 15

6. Describe the best character in *Brātri-prema*, and show by comparison
y prominence is given to this person. 15

7. Explain in your own words the purpose of *Srivale*. 10

HISTORY

Paper-setter—DR. UPENDRANATH GHOSHAL, M.A., PH.D.*Head Examiner*—PROF. SURENDRANATH SEN, M.A., PH.D., B.LITT.

SRIMATI—ANILA BOSE, B.A., B.T.
 MISS IRIS MOSES, B.A., B.T.
 MR. ABDUL MUNIM CHAUDHURI, M.A.
 „ SAMBHUNATH BANERJEE, M.A.
 „ ABANINATH BASU, M.A.
 „ SUDHINDRAKRISHNA DATTA, M.A.
 „ GOPALKINKAR MOOKERJEE, M.A.
 „ NAZIR AHMAD, M.A.
 „ NARESCHANDRA RAY, M.A.
 „ BIDHUBHUSHAN SENGUPTA, M.A.
 „ NARENDRAKRISHNA SINHA, M.A.
 „ TARAKNATH TALUKDAR, M.A.
 „ WAHED HUSAIN, B.A.

(To look over answer-papers written in Vernaculars.)

BENGALI

SRIMATI RENUPRABHA GHOSH, B.A., B.T.
 MR. SISIRKUMAR ACHARYYA, M.A.
 „ KARUNAKINKAR BANERJEE, B.A., B.T.
 „ SADHANKUMAR BANERJEE, M.A.
 „ BANWARILAL BASU, M.A.
 „ MURALIDHAR BASU, M.A.
 „ SATISCHANDRA BHADURI, M.A.
 „ SUKUMAR BHATTACHARYYA, M.A.
 „ BIRENDRANATH CHAKRABARTI, M.A.
 „ MAHENDRACHANDRA CHAKRABARTI, M.A., B.T.
 „ HARIHAR CHATTERJEE, M.A.
 „ CHARUCHANDRA DASGUPTA, M.A.
 „ NIRMALENDU DASGUPTA, M.A.
 „ RAMAPRASAD DASGUPTA, M.A.
 „ SAMARENDRAKISOR DATTA, M.A.
 „ DEBAPRASAD GHOSH, M.A.
 „ PHANIBHUSHAN MOOKERJEE, B.A., B.T.
 „ BIBHUDAN RAY, B.A., B.T.
 KHAN SAHIB MUBARAK ALI, B.A., B.T.
 MR. NEPALCHANDRA RAY, B.A.
 „ NIHARRANJAN RAY, M.A.
 „ TRIDIBNATH RAY, M.A.
 „ BANKIMCHANDRA RAYCHAUDHURI, M.A.
 „ ANNADACHARAN SEN, B.A.

ASSAMESE

MR. SURYYAKUMAR BHUIYAN, M.A.

MODERN ARMENIAN

MR. ZEBEDEE HANANIAN.

TELUGU

DR. B. RAMCHANDRA RAO, M.A., PH.D.

ORIYA

REV. BRAJANANDA DAS, B.A.

BURMESE

MR. G. J. MUNRO.

HINDI

MR. LALITMOHAN ROY, M.A.

URDU

MR. MAHAMMAD SHAFI, M.A.

Examiners—

Candidates are required to give their answers in their own words as far as practicable.

Candidates are permitted to answer SIX questions only, at least ONE being taken out of each group. Each question carries 16 marks. FOUR marks are reserved for correctness of language.

GROUP A

1. Write what you know of the reign of Kanishka.
2. Briefly describe the reign of Chandragupta II. What light is thrown on the state of the country by Fa-Hien?
3. Sketch briefly the history of any *three* of the following dynasties:—the Palas of Bengal, the Gurjara-Pratiharas of Kanauj, the Chalukyas of Vatapi, and the Pallavas of Kanchi.

GROUP B

4. Give an account of the conquests of Alauddin Khilji.
5. Sketch the history of the rise and fall of the Bahmani kingdom.
6. Give an account of Aurangzeb's policy towards (a) the Mahrattas, and (b) the Rajputs.

GROUP C

7. 'Warren Hastings will always occupy an honoured place among Anglo-Indian statesmen.' Why?
8. Give an account of the administrative changes introduced by Lord Dalhousie.
9. Mention the measures of constitutional reform that marked the administration of Lord Chelmsford.

GROUP D

10. What led Lord Cornwallis to adopt a permanent settlement for Bengal? What are its merits and demerits?
11. Enumerate the measures that the British Indian Government have taken for suppressing social abuses in India.
12. State what you know of the development of agriculture and industry in India under British rule.

GEOGRAPHY

Paper-setter—MR. SARATCHANDRA MAJUMDAR, M.A., F.R.G.S.

Head Examiner—MR. PANCHANAN SINHA, M.A.

<i>Examiners</i> — {	.. SASADHAR BANERJEE, B.A., B.Ed.
	.. BENIMADHAB BHATTACHARYA, B.A., B.T.
	.. INDUBHUSHAN DE, B.A., B.T.
	.. REVATIRAMAN DE, B.Sc., B.T.
	.. GOPESWAR MOOKERJEE, B.Sc., B.T.
	.. JITENDRANATH MOOKERJEE, B.A., B.T.
	.. SURESCHANDRA NIYOGI, B.A., B.T.
	.. KALIKRISHNA RAKSHIT, B.A., B.T.
	.. NIBARANCHANDRA RAYCHAUDHURI, B.A., B.T.
	.. PRAPHULLAKUMAR SARKAR, M.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. What do you mean by the longitude of a place? The Longitude of Calcutta is $88\frac{1}{2}^{\circ}$ E: The standard time is 24' behind Calcutta time. What is the longitude of the place from which standard time is calculated? 10

2. *Either*, What are monsoons? How are they caused? In what directions do they blow? Give reasons for your answer. 10

Or, Explain why polar regions do not receive as much heat from the sun as equatorial regions. Draw a diagram to illustrate your answer. 10

3. *Either*, What are the chief conditions affecting the climate of a place? Illustrate your answer and give a general account of the climate of India. 10

Or, Describe the Gulf Stream. 10

4. *Either*, Describe the physical features of the Deccan plateau. What are the important cultivated crops of the Deccan? 10

Or, Give a short geographical account of *either* Ceylon *or* Kashmir. 10

5. Draw an outline-map of India and insert the following:—
(a) *three* principal rivers with tributaries, (b) the Tropic of Cancer, (c) *one* important railway line with *five* chief cities on the railway routes, (d) *one* area of heavy rainfall, (e) *one* desert, (f) *one* lake. 10

6. *Either*, What are the chief raw materials and food-stuffs that are imported into the British Isles? Give a short account of the principal manufacturing industries of England. 10

Or, Give a short geographical account of the Chinese Empire with special reference to physical features and climate. 10

7. *Either*, Draw a map of the British Isles showing *two* chief coal-fields and *four* important ports. 10

Or, Draw a map of Africa and insert the Tropic of Cancer, the Tropic of Capricorn, Atlas Mountain, Niger, Pretoria, and Victoria Nyanza. 10

8. Describe the climate and rainfall of Australia, accounting for any peculiarities. In what respects does Australia differ from other continents? 10

9. Name the countries of North America with their capitals. 10

10. Write short notes on the following:—Karachi, Palghat Gap, Kolar, Nagasaki, Manchester, Lyons, Chicago, Havana, Adelaide, and Moscow. 10

ELEMENTARY MECHANICS

Paper-setter—DR. SNEHAMAY DATTA, D.Sc.

Examiners— { MR. GOPALCHANDRA BHATTACHARYYA, M.A.
 ,, KSHETRAMOHAN GHOSH, B.Sc.
 ,, SANTANUKUMAR MOOKERJI, M.Sc.

Candidates are required to give their answers in their own words as far as practicable.

Answer any SEVEN questions.

The questions are of equal value.

1. Distinguish between speed, velocity, and acceleration.

If a train, when going at 50 miles an hour, can be pulled up in 48 seconds, find at what point the brakes must be applied.

2. Find the velocity acquired in 1 second, and the distance traversed in that time, by particles sliding down a plane inclined to the horizon at 30° .

(Take $g = 981$.)

3. Explain the difference between the mass and weight of a body. What does a common balance determine, mass or weight? Briefly describe a common balance.

4. State and explain the theorem of the triangle of forces.

Show that if forces of 25 lb., 30 lb., and 55 lb., keep a particle at rest, they must act in the same straight line.

5. Find the condition of equilibrium of three parallel forces, and show how it can be experimentally verified.

6. What is a lever? Find out its mechanical advantage (in general).

A weight of 35 lb. balances a weight of 15 lb. at the extremities of a uniform lever 15 feet long. Find the length of the arms.

7. What do you understand by the centre of gravity of a body? Show that a body cannot have more than one centre of gravity.

How would you determine the centre of gravity of a flat piece of cardboard of irregular shape?

8. If the arms of a false balance are in the ratio of 24 to 25, how much per seer does a purchaser pay for ghee sold from the longer arm at Re. $1/8$ - annas per seer?

9. Describe the single string system of pulleys.

Find the least number of pulleys in a movable block weighing 10 lb. in order that a weight of 120 lb. may be lifted by a downward force not exceeding 28 lb.

10. A man rows a boat through the water at the rate of 3 miles an hour in a direction 60° east of north, in a current flowing southwards at the rate of $1\frac{1}{2}$ miles an hour. Show that the boat travels eastwards, and find its rate of progress.

ELEMENTARY HYGIENE

Paper-setter—DR. SUSILKUMAR MUKHERJEE, F.R.C.S., D.O., D.O.M.S.

Examiners— $\left\{ \begin{array}{l} \text{MR. ABDUL MAJED, M.B., D.P.H., D.T.M.} \\ \text{,, RADHAKRISHNA BANERJEE, M.B., D.P.H.} \\ \text{,, ANATHNATH CHATTERJEE, M.B., B.S.} \\ \text{,, AMALCHANDRA GANGULI, M.B., D.P.H., D.T.M.} \end{array} \right.$

Candidates are required to give their answers in their own words as far as practicable.

Equal value is attached to each question.

1. Describe briefly the physiology of respiration. What changes take place in the air during the process? Mention the evil effects of impure air on health.

2. *Either*, State the present arrangements for the supply of good drinking water in your locality. What is a Reserved Tank? How would you keep it free from pollution?

Or, What are the common impurities of water? Explain the sources from which they are derived. What harmful effects may they produce on the human system?

3. Name the nutritive or proximate principles of food, and explain the chief functions of each in the body.

4. In an outbreak of smallpox in your family, state what measures you would advise to check further spread of the disease.

5. *Either*, Describe a method with which you are acquainted for the removal and disposal of domestic refuses.

Or, Write a short essay on 'Personal Hygiene'.

COMMERCIAL GEOGRAPHY

Paper-setter—MR. L. A. NATESAN, M.A.

Examiner—DR. NALINIMOHAN PAL, M.A., PH.D.

Candidates are required to give their answers in their own words as far as practicable.

Answer the FIRST question and any FIVE of the rest.

The figures in the margin indicate full marks.

1. Draw a map of India, showing the important seaports and the chief railways leading to them. 20

2. What do you understand by the monsoon-region of Asia? Name some important products of this region. 16

3. What are the chief essentials for the commercial importance of a country? 16

4. What are the principal exports and imports of India? Give reasons. 16

5. How has the construction of (a) the Panama Canal, and (b) the Suez Canal assisted the trade of the British Empire? 16

6. What are the advantages and disadvantages of the cotton manufacturing industry of India being situated at Bombay? 16

7. Write a short essay on jute under the following headings:— 16

(a) Necessary conditions for cultivation.

(b) Principal producing areas.

(c) Process of manufacture.

(d) Principal markets.

8. State the situation and account for the importance of any *five* of the following:—(a) Bombay, (b) Singapore, (c) Hongkong, (d) Kimberley, (e) Graaf Reinet, (f) Winnipeg, (g) Oporto. 16

BUSINESS METHOD AND CORRESPONDENCE

Paper-setter—MR. NARENDRANATH SARKAR, M.A.*Examiner*—MR. ARUNENDU DASGUPTA M.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Attempt any TWO of the questions marked with an asterisk and any FOUR of the others.

1. (a) What is meant by a Code telegram? What are its special utilities? 18

(b) Write in code words the following message and its reply (between a sharebroker and a customer):—

Message.

Price of 4% Indian Government Securities 101. Shall we buy?

Reply.

Do not buy. Quote for 3% Indian Government Securities.

[OCAZM, 4%; IGOST, Indian Government; PYMNA, Securities; OJANC, Price of; LIDJY, 101; BIOC'S, Shall we buy; BINUG, Do not buy; OPLEC, Quote for; OCANB, 3%.]

2. Write an answer to the following advertisement:— 18

'Wanted Type-writing and Shorthand Clerk (Matriculate) for manufacturer's office in Calcutta; must have good speed and knowledge of office routine. Address, stating qualifications, experience, and salary to Box No. 183, *The News of Bengal*, Calcutta.'

3. Explain the gelatine process and the stencil process as methods of duplicating documents. 18

4. What are Debit and Credit Notes? Give a specimen of each. 18

5. Give complete and detailed rulings of a Sales Book and a Purchases Book, showing at least *three* entries in *three* different columns in the case of each of these two books. 18

*6. What is Marine Insurance? Distinguish between General Average and Particular Average. 14

*7. C, a Calcutta merchant, sends a consignment of jute to D, a Dundee merchant. C draws a bill on D, and on the security of this gets an advance from the Bank of India, Ltd., who reimburse themselves out of the realizations of the bill. Describe the complete procedure involved in the above transaction up to the final disposal of the realizations of the bill. 14

8. Enumerate and explain *six* of the different kinds of services rendered by a Bank to its customers. 18

*9. Explain the salient points of difference between a Partnership and a Private Limited Company. 14

*10. Distinguish between a Preference Share and a Debenture. Can they be issued (a) at a premium, (b) at a discount? Are they redeemable? 14

11. Explain any *six* of the following terms and abbreviations:—Letter of Regret, Allotment Letter, Dock Charges, Consular invoice, Bill of Exchange, F.O.R., B/P, D/A Bill, P/N, Telegraphic Transfer, Letter of Credit, F.a.s. 18

12. State the names of the countries where the following currencies are used:—yen, lira, drachma, escudo, rupee, mark, lev, piastre, franc, guilder, krone, kronor. 18

Intermediate Examination, 1934

ENGLISH

Paper-setters— } M.L.A.
 MR. CHARUCHANDRA BISWAS, C.I.E., M.A., B.L.,
 REV. FATHER F. X. CROHAN, S.J.
 MR. PRAPHULLACHANDRA GHOSH, M.A.

FIRST PAPER

POETRY

*Head Examiner—*DR. MOHINIMOHAN BHATTACHARYYA, M.A., PH.D.

<i>Examiners—</i> }	{	MISS STELLA BOSE, M.A.
		MR. PRAPHULLAKUMAR BANERJI, M.A.
		„ RAJKUMAR CHAKRAHARTI, M.A.
		„ BANABIHARI DAS, M.A.
		„ PRAPHULLAKUMAR DAS, M.A.
		„ JITENDRANATH DASGUPTA.
		„ ACHYUTAKUMAR DATTA, M.A.
		„ PRAPHULLARANJAN DHAR, M.A.
		„ BIBHUTIBHUSHAN GHOSHAL, M.A.
		„ NRIPESCHANDRA GUHA, M.A.
		„ SATYASARAN KAHALI, M.A.
		„ BANIKANTA KAKATI, M.A.
		„ SOMNATH MAITRA, M.A.
		„ DHIRENDRANATH MUKHERJEE, M.A.
		„ HARICHARAN MOOKERJEE, M.A.
„ MANIKUMAR MOOKERJEE, M.A.		
„ NIRENDRANATH RAYCHAUDHURI, M.A.		
„ TAHIR JAMIL, M.A.		

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Answer *one* of the following:— 16
 - (a) Sketch in outline the purpose and plan of *The Traveller*.
 - (b) Set forth the main theme of *The Deserted Village*, quoting illustrative lines, if you can.
 - (c) Estimate the poetical value EITHER of *The Traveller*, OR of *The Deserted Village*.
 - (d) Draw a vivid pen-picture of any of the characters portrayed in *The Deserted Village*.
2. *Either*, What light does the scene between Volumnia and Coriolanus which you have read throw on the character of Coriolanus? 16

Or, 'Yet stay ; let me not rashly call in doubt
Divine prediction.'

What trait in Samson Agonistes' character is brought out in these words? What is the 'prediction' referred to, and wherein is the 'rashness' supposed to lie?

3. Write short 'explanatory notes on any *four* of the following:—
20 (= 4 × 5)

- (a) Cr  ation's heir, the world, the world is mine!
- (b) His pity gave ere charity began.
- (c) For oft alike both come to evil end.
- (d) The truth is great, and shall prevail.
- (e) Nature's most noble offspring—yet her worst.
- (f) The surge and thunder of the Odyssey.

4. *Either*, What reflections are awakened in Cowper's mind by his mother's picture?

Quote some lines from the poem which strike you as particularly pathetic. 16

Or, What was King Arthur's last charge to Sir Bedivere, and why was the latter hesitating to fulfil it?

5. Explain any *three* of the following, stating *separately* the context in each case:—
24 (= 4 × 6)

- (a) Pride in their port, defiance in their eye,
I see the lords of human kinds pass by.
- (b) Let school-taught pride dissemble all it can,
These little things are great to little man.
- (c) Ill fares the land, to hastening ills a prey,
Where wealth accumulates and men decay.
- (d) Though round its breast the rolling clouds are spread,
Eternal sunshine settles on its head.
- (e) Help us to save free conscience from the paw
Of hireling wolves, whose Gospel is their maw.
- (f) I pass through the pores of the ocean and shores ;
I change, but I cannot die.
- (g) And I stood and watched
Till all was tranquil as a dreamless sleep.

6. *Either*, Give the substance of any *one* of the following poems:—
Ode to Autumn, The Revealed Madonna, Pen and Ink. 8

Or, Name the pieces (with authors) from which the following quotations are taken:—

- (a) The swan on still St. Mary's Lake
Float double, swan and shadow!
- (b) Thou'lt leave Thy wrath, and say,
'I will be sorry for their childishness.'
- (c) E'en like the passage of an angel's tear
That falls through the clear ether silently.

- (d) Like spirits that lie
In the azure sky
When they love but live no more.

SECOND PAPER

PROSE

Head Examiner—MR. RABINDRANARAYAN GHOSH, M.A.

Examiners—	{	..	BENODEBEHARY BANERJEE, M.A.
		..	KIRTISCHANDRA BANERJEE, M.A.
		..	JYOTSNAMAY BASU, M.A.
		..	DWIJENDRANATH BHATTACHARYYA, M.A.
		..	DURGAPADA BISWAS, M.A.
		..	BHOLANATH CHAKRABARTI, M.A.
		..	SURENDRANATH CHAKRABARTI, M.A.
		..	DEBENDRANATH CHATTERJEE, M.A.
		..	JOGENDRAKUMAR CHAUDHURI, M.A., B.A. (Oxon.).
		Dr.	SATYENDRAKUMAR DAS, M.A., PH.D.
		Mr.	BIJAYRANJAN DASGUPTA, M.A.
		..	SUSILCHANDRA DATTA, M.A.
		..	SASIKUMAR GHOSH, M.A.
		..	AMULYARATAN GUPTA, M.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Answer *one* of the following questions:— 20

(a) How does Ruskin distinguish 'wise work' from 'foolish work'?

(b) In what ways, according to Stevenson, can one get the best out of a walking tour?

(c) What do you learn about Scott's habits and temperament from Hutton's account of his life at Ashiestiel and at Abbotsford?

2. *Either*, Narrate with appropriate comments the episode of Hector and Andromache in the *Iliad*. 20

Or, Write a note on Homer's treatment of the character of Helen. 20

Or, Explain the following lines, and relate the different versions of this legend found in literature:— 20

The high masts flicker'd as they lay afloat,
The crowds, the temples, waver'd, and the shore,
The bright death quiver'd at the victim's throat;
Touch'd;—and I knew no more.

3. *Either*, Fully set forth the biblical parable alluded to in *one* of the following passages:— 12

(a) 'I never see thy face but I think upon hell-fire and the rich man that lived in purple; for there he is in his robes, burning, burning.'

(b) 'Shall I keep your hogs and eat husks with them? What prodigal portion have I spent, that I should come to such penury?'

Or, Write on *one* of the following:— 12

(a) The Temptation of Jesus.

(b) The Parable of the Good Samaritan.

Or, 'In old days there were angels who came and took men by the hand and led them away from the city of destruction. We see no

white-winged angels now. But yet men are led away from threatening destruction: a hand is put into theirs, which leads them forth gently towards a calm and bright land, so that they look no more backward; and the hand may be a little child's.'

Review briefly the life of Silas Marner in the light of these remarks.

12

4. *Either*, What do you know of—Benoît de Sainte-More; the Roll of Battle Abbey; 'the blameless Ethiopians'?

6

Or, Explain the meaning and origin of the following phrases, which are in common use:—'Achilles' heel'; 'an apple of discord'; 'stentorian voice'; 'a whited sepulchre'.

6

5. Explain the following passages, with reference to the context:—32

(a) *Either*, Bags and crags have the same effect on rags.

Or, Books are like men's souls: divided into sheep and goats.

(b) *Either*, The Lernean pangs are quenched. The riddle of sickness is solved; and Philoctetes is become an ordinary personage.

Or, If he *will* open the merchant Abudah's chest and walk arm in arm with the hag, the chances are that he will not be happy.

(c) *Either*, The whole reads like a tale of mediaeval tournament, except that Helen herself is the prize of victory as well as the Queen of Beauty.

Or, But the wise counsel of Polydamas meets the same fate as that of Ahithophel; Heaven will not suffer men to listen to it.

(d) *Either*, There have been many circulations of the sap before we detect the smallest sign of the bud.

Or, The gods of the hearth exist for us still; and let all new faith be tolerant of that fetishism, lest it bruise its own roots.

6. Answer *either* A *or* B:—

10

A

Quote from memory *either* (a) the Beatitudes, *or* (b) two of the following:—(i) And why take ye thought for the morrow . . . not arrayed like one of these. (ii) Beware of false prophets . . . bringeth forth evil fruit. (iii) Heal the sick . . . the workman is worthy of his meat.

B

Explain *two* of the following passages, and indicate the context:—

(a) He shall baptize you with the Holy Ghost, and with fire: Whose fan is in his hand, and he will thoroughly purge his floor, and gather his wheat into the garner; but he will burn up the chaff with unquenchable fire. (He shall baptize you in the Holy Ghost and fire. Whose fan is in his hand, and he will thoroughly cleanse his floor: and gather his wheat into the barn, but the chaff he will burn with unquenchable fire.)

(b) Ye are the salt of the earth: but if the salt have lost his savour, wherewith shall it be salted? (You are the salt of the earth. But if the salt lose its savour, wherewith shall it be salted?)

(c) Neither do men put new wine into old bottles. (Neither do they put new wine into old bottles.)

THIRD PAPER

Head Examiner—MR. A. K. CHANDA, M.A.

<i>Examiners</i> --	{	„	ABU HENA, M.A.
		„	BIBHUTIBHUSHAN BANERJEE, M.A.
		„	HRISHIKES BASU, M.A.
		„	BANKUBIHARI BHATTACHARYYA, M.A.
		„	GOPALCHANDRA BHATTACHARYYA, M.A.
		„	HARENDRACHANDRA CHAKRABARTI, M.A.
		„	JATINDRANATH CHAKRABARTI, M.A.
		„	SASIMOHAN CHAKRABARTI, M.A.
		„	SAURINDRAKUMAR CHAUDHURI, M.A.
		„	EBRAHIM KHAN, M.A.
		„	JNANADAKANTA GANGULI, M.A.
			LIEUT. AJITKUMAR GHOSH, M.A.
			MR. JATINDRAMOHAN GHOSH, M.A.
		„	M. D. GRAY, M.A.
		„	NANIGOPAL MOOKERJEE, M.A.
		„	SURENDRANATH RAY, M.A.
		„	DEBENDRAKUMAR SEN, M.A.
			PROF. SHAHID SUHRAWARDY, B.A. (Oxon).

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Write an essay on *one* of the following subjects:—

40

- The use and abuse of athletics.
- The educational possibilities of broadcasting.
- Experience is the best teacher.
- A visit to a place of historical interest.

2. Give in your own words the substance of *one* of the following passages:—

20

(a) Perseverance is the very hinge of all virtues. On looking over the world, the cause of nine-tenths of the lamentable failures which occur in men's undertakings, and darken and degrade so much of their history, lies not in the want of talents, or the will to use them, but in the vacillating and desultory mode of using them, in flying from object to object, in starting away at each little disgust, and thus applying the force which might conquer any one difficulty to a series of difficulties so large that no human force can conquer them. The smallest brook on earth, by continuing to run, has hollowed out for itself a considerable valley to flow in. Commend me therefore to the virtue of perseverance. Without it all the rest are little better than fairy gold, which glitters in your purse, but when taken to market proves to be slate or cinders.

(b) It has been said that all men are controlled either by reason or by passion. Passion, however, leads her slaves into innumerable disasters. If a man cannot control himself, how can he expect to be master of others? And on the other hand he that is master of himself will soon be master of others, at least if he wishes; and if he cannot master himself, others will soon master him. It has been well said that anger is like rain, which breaks itself against that on which it falls. Always then keep your temper: when you are right you can surely

keep it, and when you are in the wrong you cannot afford to lose it. If you can master yourself you can master anything. The mastery of self, however, requires a continual watch all through one's life, and yet every one can win the victory if he chooses. It is not the wicked world without, but the sinful soul within, that ruins a man.

3. Give clearly the meaning of *one* of the following extracts:— 20

(a) Not always seek the open sea
Where tempests fright the timid soul,
Nor on life's voyage sail too nigh
The rocky shore, the treacherous shoal.
Whoever loves the golden mean,
On him no ruined household falls,
His modest cot no mark for shafts
Which envy darts 'gainst castle walls.
So thou when storms are lowering dark,
Be resolute and breast the gale,
But prudent be when winds are fair—
Draw in thy proudly swelling sail.

(b) Since trifles make the sum of human things
And half our misery from our foibles springs;
Since life's best joys consist in peace and ease,
And few can save or serve, but all may please;
Oh! let the ungentle spirit learn from hence,
A small unkindness is a great offence.
Large bounties to restore, we wish in vain,
But all may shun the guilt of giving pain.
To bless mankind with tides of flowing wealth,
With power to grace them, or to crown with health,
Our little lot denies, but heaven decrees
To all the gift of minst'ring ease.

4. Define any *three* of the following figures of speech, giving an example of each:—mixed metaphor, hyperbole, metonymy, oxymoron, litotes, bathos, zeugma. 10

5. Scan *one* of the following extracts:— 10

(a) Soft on the flowery herb I found me laid
In balmy sweat, which with his beams the sun
Soon dried and on the reeking moisture fed.
Straight toward heaven my wondering eyes I turned.

(b) And the soul of the rose went into my blood,
As the music clash'd in the hall;
And long by the garden lake I stood
For I heard your rivulet fall.

BENGALI VERNACULAR

Paper-setter—MR. SYAMAPRASAD MOOKERJEE, M.A., B.L.,
BARRISTER-AT-LAW, M.L.C.

Head Examiner—PROF. KHAGENDRANATH MITRA, RAI BAHADUR, M.A.

Examiners—	{	SRIMATI LABANYALEKHA BANERJEE, B.A.
		„ PUSHAMAYI BASU, M.A.
		„ SUNITIBALA CHANDA, M.A.
		„ SWARNAPRABHA SEN, B.A., B.T.
		MAULVI ABDUL MAJID, M.A.
		MR. RAMRENU ACHARYYA, M.A., B.T.
		„ JATINDRAMOHAN BAGCHI, B.A.
		„ CHARUCHANDRA BASU.
		„ BISHNUCHARAN BHATTACHARYYA, M.A.
		„ NARENDRANATH BHATTACHARYYA, B.A.
		„ PURNACHANDRA BHATTACHARYYA, M.A.
		„ JANARDAN CHAKRABARTI, M.A.
		„ MOKSHADACHARAN CHAKRABARTI, M.A.
		„ BISWAPATI CHAUDHURI, M.A.
		„ SUDHIRKUMAR DASGUPTA, M.A.
		„ JOGENDRANATH GUPTA, M.A.
		„ BIBHUTIBHUSHAN KANTHAL, M.A.
		„ SIBRATAN MITRA.
		„ KUMUDCHANDRA RAYCHAUDHURI, M.A.
		„ BINAYAK SANYAL, M.A.
		„ PRABODHCHANDRA SEN, M.A.
		„ SARATKUMAR SENGUPTA, M.A.
		„ HEMCHANDRA VIDYARATNA.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. *Either*, Give in your own words Sir Asutosh Mukherjee's opinion on the future of Bengali literature.

Or, Narrate in simple language the story of the Golden Sita in connection with Rama's horse sacrifice. 10

2. Explain with reference to the context any *two* of the following passages:— 12

(a) লোকের বিশ্বাস, কল্পতরুর নিকট প্রার্থনা করিলে অভীষ্ট বর প্রাপ্ত হওয়া যায়। রামায়ণ ও মহাভারত হিন্দু সন্তানের পক্ষে সেই কল্পতরু। আমাদের জাতীয় জীবন গঠনের পক্ষে এই দুই গ্রন্থ যে রূপ সহায়তা করিয়াছে, ইলিয়দ্ ভিন্ন আর কোন কাব্য সে রূপ করিয়াছে কি না সন্দেহ।

(b) মহাকাব্যের মধ্যে একটা উন্মুক্ত অকৃত্রিম স্বাভাবিকতা আছে, তাহা বোধ করি আর কখনও কিরিয়া আসিবে না। স্থনিপুণ শিল্পী একালে তাম্রমহল গড়িতে পারেন, কিন্তু পিরামিডের দিন বুঝি একেবারে চলিয়া গিয়াছে।

(c) আমাদের উৎসবে এই অন্তরেরই প্রথম প্রতিষ্ঠা। সমারোহ সহকারে আমোদ-প্রমোদ করায় আমাদের উৎসবকলা কিছুমাত্র চরিতার্থ হয় না, কিন্তু তাহার মধ্যে সর্বজনের আন্তরিক প্রসন্নতা ও শুভইচ্ছাটুকু না থাকিলে নয়।

(d) এসো ভাই সকল! আমরা এই অন্ধকার কাল স্রোতে ঝাঁপ দিই। এসো আমরা ষাট কোটি ভুজ্জে ঐ প্রতিমা তুলিয়া, ছয় কোটি মাথায় বহিয়া, ঘরে আনি। এসো, অন্ধকারে ভয় কি? ঐ যে নক্ষত্র মধ্যে মধ্যে উঠিতেছে, নিবিতেছে, উহারা পথ দেখাইবে।

3. Explain any two of the following passages :—

12

(a) নয়নক নিন্দ গেও বয়ানক হাস।
সুখ গেও বঁধু সঙ্গ দুখ মঝু পাশ ॥

(b) যে দিন বহিত নব বসন্ত সমীর
ধরণীর সর্বাত্মের পুলক-প্রবাহ
স্পর্শ কি করিত তোরে? জীবন-উৎসাহ
জাগা'ত কি অপরূপ কম্প তব দেহে?

(c) চমকিল বিদ্যুৎ সহসা!
এ আলোকে বুঝিয়াছি, এ নারীরে চিনিয়াছি;
এ যে সেই সত্যত সরসা,
ভুবনমোহিনী ধনী রূপসী বরষা।

(d) প্রভাতে অরুণ-ছটা, সায়াক্ষ-অবধরে
স্বরঞ্জিত মেঘমালা কাস্ত রবিকরে,
নিশীথে সুধাংশু-কর, তারা-মাখা নীলাশ্বর,
কে ভুলিবে, কে ভুলিবে থাকিতে জীবন।

4. Quote from memory the *first six* lines of *either* the গৌরচন্দ্রিকা by Brindaban Das, *or* Rabindranath Tagore's শেষেখোয়া, *or* Chittaranjan Das's অন্তর্যামী।

6

5. (a) Construct sentences illustrating the use of each of the following expressions :— 5

আনাগোনা, পথে বসা, বাতাহত, মণিকাঞ্চন, মুহূমান ।

- (b) Expound the *samāsas* in the following words :— 5

রাজহংস, বাগ্‌দত্তা, আত্মহুলস্থিত, গাছপাকা, আগাগোড়া ।

6. Amplify the idea contained in the following lines :— 15

মহামহীয়ান্ দেব নিয়ন্তা বাহার
সে কি ক্ষুদ্র ? দেখ নাই নয়নে কি কত
একটা প্রহরী, রাজকার্যে নিয়োজিত,
ক্রভঙ্গে চালিত করে শত শত জনে ?
জানে সে দুর্বল একা ; কিন্তু বুঝে মনে,
রাজশক্তি, কোটি বাহুবলে বলবতী,
বিরাজে পশ্চাতে তা'র ; তাই সে সবল ।
ভক্ত বুঝে মনে মনে, পশ্চাতে আমার
দাঁড়িয়ে বিরাটবেশে সর্বশক্তিমান্ ।

7. Translate into Bengali :— 15

From the time Lincoln was eight years old, he was accustomed to the almost daily use of the axe. After he became President of the United States, he visited the hospitals at City Point, where three thousand sick and wounded soldiers were sheltered. He insisted upon shaking hands with every one of them ; and after performing the feat, and friends were expressing their fears that his arm would be lamed by so much handshaking, he remarked,—‘The hardships of my early life gave me strong muscles.’ And stepping out of the open door, he took up a very large, heavy axe which lay there by a log of wood, and chopped vigorously for a few moments.

8. Write an essay on any *one* of the following :— 20

(a) Influence of companions on character: evils of bad company—how they can be avoided.

(b) Vernacular as the medium of instruction: handicap of learning through a foreign tongue—its results.

(c) Country games versus foreign games: description of country games you have played—foreign games and their popularity.

— — — —

ASSAMESE VERNACULAR

Paper-setter—MR. SURYAKUMAR BHUIYAN, M.A.

Examiner—MR. AMBIKANATH BORAH, M.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. *Either*, Write the story of Jaymati as given by Harakanta Barua in the light of the following remark:—‘Harakanta’s version gives a rational account of the momentous self-sacrifice of Jaymati. The current version regarding her death, on which poems and dramas have been written, is attended with numerous fallacies.’

Or, Narrate the leading features and events of the reign *either* of Pratāp Singha Swargadeo, or of Rudra Singha Swargadeo.

2. *Either*, What are the impediments in the way of international fellowship and good-will? 10

Or, Point out the salient characteristics of the present-day civilization of the world. 8

3. *Either*, ‘The glorification of Sri-Krishna is the objective of the poem *Kumār-haran*.’ Show how this is so. 10

Or, Briefly point out the elements of improbability in the story of *Kumār-haran* and justify their introduction.

4. Explain with reference to the context any *three* of the following passages:— 8

(a) একে স্ত্রী যৌবনকাল, তাতে ৰাজ-ভাৰ্যা, গৰু, দৰ্প, অহংকাৰৰ
ঠাই নাই; বিশেষ ৰাজ-পদপিও পালে। এতেকে অনায়াসে বুজিব পৰা যায়
তেওঁৰ অহং-গৰিমা নহৈ কাৰ হব?

(b) তাহানিৰ কথা আজি সপোনত উঠি
লগত আনিলে এই ফুলৰ চাকিটি।
আদৰ মালতী তব মৰমৰ চিন
তুলি ধলে। হৃদয়ত জীওঁ যত দিন।

(c) বুদ্ধদেৱৰ জীৱনকালত যি কাৰ্য্য কৰিবলৈ বাকী আছিল তাক
মহাৰাজ অশোকে সমাপন কৰিলে।

(d) সংসাৰ-সাগৰে মজি আছে সৰ্বজন।
মহাভাগৱত নৌকা তাহাৰ তৰণ।
যদি শুদ্ধ চিন্তে শুনে এহি ভাগৱত।
সংসাৰ-সাগৰ জলে তৰিব লীলাত।
মহাভাগৱত চাৰি বেদতে প্ৰধান।
পুৰাণে ভাৰতে আৰু হুহিকে সমান।

5. *Either*, Amplify the idea contained in *one* of the following passages — 15

- (a) মিত্ৰৰ ঘৰলৈ মাহে-পষে যাবা,
বৰ পীৰাখন বহিবলৈ পাবা ।
- (b) মাকৰ নাম তিতিকী বান্দী,
পুতেকৰ নাম চুলতান গাজী ।
- (c) টিক্ বনধা, ওলায় মাটি,
মাক ভালেই জীয়েক জাঁতী ।
- (d) সংসাৰ ভৈলেক বিষবৃক্ষ নিবন্তৰ ।
তাৰ ছুই গুটি স্বাদ ফল মনোহৰ ॥
কাব্য-অমৃতৰ বস, আলাপ সন্তৰ,
এহি বিনে নাহি একো স্থ মনোহৰ ॥

Or, Give the substance, in Assamese, of the following passage :—

বিদেশৰ খবৰ, বিশ্বমানৱৰ মনৰ বাতৰি মোক লাগে, কিন্তু তাৰ আগতে মোক মোৰ ঘৰৰ খবৰ লাগে, মোৰ নিজৰ দেশৰ মাহুহৰ মনৰ বাতৰি লাগে ; নহলে মোৰ মনত তৃপ্তি নহয় । মই ভালকৈ জানিছোঁ যে মোৰ যিখন স্বদেশ সেইখন বিশ্বৰ ভিতৰতে, আৰু নিজৰ দেশৰ মনৰ বাতৰিও বিশ্বমানৱৰ মনৰ বাতৰিৰ ভিতৰতে । মোৰ ঘৰত আয়ে বান্ধি দিয়া ভাত এমুঠি আৰু তেওঁই বান্ধি দিয়া বচিকৰ কচু ঢেকিয়াৰ আঙাৰে মই প্ৰথমতে উদৰ পূৰ্ণ কৰি লৈহে, মোৰ ওচৰ-চুবুৰীয়াৰ খোৱাত ছত্ৰিশ ব্যঞ্জনৰে সৈতে গোকত মলমলাই খোৱা জহাচাউলৰ ভাত ভোজনৰ তুলবলৈ মোৰ চিন্তা ধাবিত হয় । তেতিয়াহে মই ভাবিবলৈ আৰু ভাবি যত্ন কৰি চাবলৈ প্ৰস্তুত আছোঁ যে তেনেকুৱা জিহ্বাবজ্জক আৰু চিন্তাবজ্জক ব্যঞ্জন আমালৈকো আমি যুগুত কৰিব পাৰিম । কিন্তু বিহকে যুগুত কৰোঁ, তাত আমাৰ কচু, ঢেকিয়া, লক্ষাশাক, বাবৰি-শাকৰ গোক ধাকিবই লাগিব, আৰু কাঁহদী-খাবলি পাতৰ কাষত অপৰিহাৰ্য্য । শ্ৰীলক্ষ্মীনাথ বেজবৰুৱা ।

6. Translate *one* of the following passages into Assamese:— 15

(a) The atrocities practised by the Burmese soldiers upon the hapless Assamese people are still recollected by our countrymen with awe and terror. A number of men and women would be shut up in

a house which was set fire to afterwards. Youthful virgins were forced to become their wives. The people fled to distant parts of the country where they were plundered by the Dublas and other wild tribes. Villagers were robbed of their property and were subjected to inhuman tortures in the event of their failure to produce their money. The fathers of beautiful maidens had great credit with the Burmans; they would be readily admitted into their fold; they would dress themselves as Burmese and commit excesses upon their own countrymen.

(b) It has been a real pleasure to me that on this, my first visit to Assam, I have been able to come to the historic Majuli and there to meet the great Vaishnavite abbots with their monks, their disciples, their tenants and their friends. I feel that I am now in the real heart of old Assam, and I am indeed touched by the warmth of the loyal welcome which I have received. The kindly feeling which exists today between the British rulers and the Majuli abbots has its root in past centuries. Assam is now, and always has been, a deeply religious province. A few days ago I visited the shrine of the Muhammadan preacher Shah Jalal in the town of Sylhet, and was able to see for myself the devotion and piety of the followers of that Islamic saint. To-day I am on Hindu ground. About 450 years ago a wave of Vaishnavite reform passed over India, and nowhere was the movement stronger and deeper than in Assam. The great leader Sri Chaitanya was born of parents from the Surma Valley; the equally great leaders Sankar Deb and Damodar Deb of parents from the Brahmaputra Valley. To-day, the followers of these holy men are numbered by millions throughout India.—*Lord Chelmsford's reply to the address presented at Kamalabari by the Gosains on the Majuli on the 7th November 1920.*

7. Frame sentences illustrating the meaning of *five of the following expressions* :—

সত্ৰ-সভা, ফকিৰ-পীৰ, বাণ-বাৰিষা, আজান বন্দী, লালবন্দী, কেঁকোঁৰ।
নাঙ্গল, ওফাইদাং, লচপটী, টাটক-নাটক, নাক কটা, বৰকণি, অমাত্যৰ মাত,
বাম-টাঁকোন, মাধ-মাৰ, জয়দেউ-কাকুতি, অগ্নি-শৰ্মা, মোকাবিলা, বজাল।

8. Write an essay in Assamese on *one* of the following subjects :— 25

- (a) Assamese traits or racial characteristics.
- (b) Assamese weaving.
- (c) The principal rivers of Assam.

(d) *One* of the following Assamese celebrities :—Queen Kuranganayani, Queen Amritaprabha, Mula Gabharu, Purnananda Buragohain, Anandarām Dhekial Phukan, Haradatta Chandhuri, Ājan Faqir, and Sankar Deb.

- (e) Bread-earning professions in Assam.
- (f) An idle brain is the devil's workshop.
- (g) Work is worship.
- (h) School and college magazines and their uses.

MAITHILI

Paper-setter :—KUMAR GANGANANDA SINHA, M.A.

Examiner :—PANDIT DEBANANDA JHA.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Manabodha has tried to give a human touch to the mythological story of Krishna's childhood.—Examine, and illustrate your statements with quotations as far as possible. 15

2. Explain what connexion the following passage has with the plot of *Sundarasahyoganaṭaka* of Jivana Jhā :— 10

नटी—बह्वां के तं नाचे काह मे बिच रहैए हमारा तं एकटा कन्या सेहो दुःखिता पखन धरि जमाइक पुकारी पर्यन्त नहि गेलैन्ह तखन हम की मन पाइब ।

3. Give in Maithili a short account of the birth of Gaṇeśa. 7

4. Explain, with reference to the context :— 8

सरस बसना समय भल पाचीलि दखिन पवन बहु धीरे ।
स्वपनहु रूप बचन एक भाखिय मुख सोँ दुरि कर चोरे ॥
तोहर बदन सन चाँद होयथि नहि यइयो यतन बिह देला ।
कए बेरि काटि बनाचील नब कए तइयो तुलित नहि भेला ॥
लोचन तूष कमल नहि भए अक से जग के नहि जानि ।
से फेरि जाय नुकायल जल भय पइज निज अपमानि ॥

5. Amplify in Maithili :— 15

चतुर बेह कहबैत अहि जे देशकालपात्र क अनुसार एहि परिवर्तनशील संसार में चलैत अहि ।

6. Translate into Maithili :—

The Sikhs are neither a race, nor a nationality, nor a caste, but primarily the followers of a religion. They form a community which is of importance by reason of the traditional prestige derived from its religious and political history rather than from its numbers. The total strength in the whole of India at the 1931 census was 4,306,000. Of these three millions live in the British province of the Panjab and over a million in the Indian States geographically associated with that province. The community forms about one-seventh of the total population of the British Panjab and the adjacent States combined. 15

7. Construct sentences in Maithili to illustrate the use of all the *samāsas*. 10

8. Write an essay in Maithili on one of the following subjects :— 20

(a) *Rain in India* : (i) Season. (ii) Effects and necessity. (iii) Excess of rain causes as much hardship as its paucity.

(b) *Women of Mithila* : (i) Their position to-day. (ii) Their position in the past. (iii) Their proper position.

HINDI

Paper-setter :—DR. BABURAM SAKSENA.

Examiners— { PANDIT BABUA MISRA JOYTISHACHARYYA.
 { MR. LALTA PRASAD SUKUL, M.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. (a) Derive the word 'Hindi' and give its various significances. 5
- (b) Write a short note on the gender of Hindi words signifying inanimate objects. 4
- (c) Correct the mistake of grammar, spelling, and idiom of the following, and assign reasons for your corrections :— 6

१. इन्हों ने दिल्ली जाना है ।
२. कल हम रोटी खाय थे ।
३. लल्लू जी लाल अच्छे लेखक रहे ।
४. मेरे से नहीं चला जाता ।
५. तुमारा दर्शन पाकर हतार्थ हो गया ।
६. रामचन्द्र जो अयोध्या का राजा था ।

2. *Either*, Give a short account of the life of Harischandra and estimate the value of his contribution to Hindi literature. 5

Or, What do you know of Lakshman Singh and his works ?

3. Give a summary in about ten lines *either* of सुपाल मिश्रा of Pratāp Nārāyan Mīśra *or* of नववा मल्ल of Raghunāth Dās. 10

4. Amplify one of the following :—

Either, बिन पौरुष आपति चिरि आवत ।

Or, मूढ़ नरिस तजे जब गौती । रुप सन करे प्रजा नहिं प्रीती ॥

5. Explain in Hindi, with reference to the context :—

(a) *Either*, एक पुरुष किशोरवयस, ज्ञानवर्ध, चन्द्रमुख, कमलनयन, अति सुन्दर कामदेव का स्वरूप, पीताम्बर पहिने, नीरमुकुट शिर धरे, बिभङ्गी हवि करे रत्न जांटल आभूषण, मकराकृत कुण्डल, मोहनरूप. वनमाला, गुञ्जहार पहिने और पीतवसन ओढ़े, महाबल सन्मुख आय खड़ा हुआ। 10

Or, श्रीमती राधा का प्रेम कैसे उत्तम और सुन्दर है, इस में वह कौन ही मधुरिमा है, जिसकी माधुरी की श्रीराधा इस प्रेम से पान करती है, इस में जो सुखानन्द राधा की मिलता है, उसकी सीमा और उसका स्वाभाविक लक्षण क्या है—यही अनुभव करने को आप इस जगत में प्रादुर्भूत हुए थे।

(b. *Wither*, महिमा अमित नीरि मति धीरी।

रवि सनमुख खद्योत अँजीरी ॥

जदपि विरज व्यापक अविनासी।

सब के हृदय निरन्तर बासी ॥

तदपि अनुज श्री सज्जित खरारी।

बसहु मनसि मम कानन चारी ॥

जे जानहिं ते जानहु स्वामी।

सगुन अगुन उर अन्तर जानी ॥

10

Or, कचिर बिहग तू ही कूजनि अभंग तू ही,

कृतु रसरंग तू ही रसिक अनोर है।

जगत वसंतवारी सुखसा अनल तू ही,

तू ही निकसंत तू ही दंपति अधीर है।

“पूरन” अर्णद तू ही कचिर सुगन्ध तू ही,

सीतल सुमंद तू ही सुखद समीर है ॥

(c) *Either*,

अमर तुम मधु के आखनहार।

आम की रस भरी खदुल मंजरी तासों प्रीति अपार ॥

रहसि रहसि नित रस लीवे की धावत है करि नेम।

क्यों कल आई कमल बसिरे कित भूली प्यारी की प्रेम ॥

Or,

सचन होइ तर बैठ जमुन तट, कान्ह कलिक कीर्ति ।
 विपिन विपिन ते गाय बहिरन, पठै सखन की दीजी ॥
 ठौर ठौर पुनि बगर बगर के, बहुरा बिकुरि हिरै हैं ।
 दूँदन तुम जिन जाव कहूँ बन, भटकत पांव पिरै हैं ॥

6. Translate *one only* of the following into Hindi :—

15

(a) India, though a large importer of sugar, is nevertheless one of the most important sugar-cane-growing countries in the world, the area under the crop being above three million acres. The crop is mostly grown in the sub-montane tracts of Northern India. The common varieties are thin and hard, yielding a low percentage of juice of fair quality, but these are now being rapidly replaced by seedling canes of high merit compared to those of other sugar-cane-growing countries.

(b) An epoch in Indian educational history is marked by Sir Charles Wood's dispatch in 1854. Perhaps its most notable feature was the emphasis which it laid on the importance of primary education. The old idea that the education imparted to the higher classes of society would filter down to the lower classes was discarded. The new policy was boldly to combat the ignorance of the people which may be considered the greatest curse of the country.

7. Write an essay of about *fifteen* lines on *one only* of the following subjects :—

20

(a) रेलवे ड्रेन—रेलवे का भाविचार, भारत में प्रथम रेल, अन्य सवारियों से रेल की तुलना, रेल से लाभ, रेल से हानि ।

(b) ग्राम जीवन—ग्राम के मनुष्य, ग्राम के पशु, ग्रामों में जीविका, ग्रामों में शिक्षा, जीवन की सादगी, ग्राम जीवन में अनुविधाएँ, ग्राम जीवन के लाभ ।

NEPALI

Paper-setter :—Mr. BODHBIKRAM ADHIKARI, M. A.

Examiner :—Mr. SURYA VIKRAM GEWALI, B. A., B. T.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Describe fully the part played in the *Mahābhārata* by any *one* of the following personages :—(a) Bhīshma, (b) Arjuna, (c) Dronāchārya. 10

2. *Either*, Briefly describe in Nepali the main incidents recorded in the *Shabhāpārva*. 10

Or, Describe some of the acts of injustice and outrage done by the Kauravas to the Pāṇḍavas. 10

3. Give the substance of the following passage in simple Nepali of your own :— 10

स्त्रीजातिहरूलाई शिचित गराउन हुँदैन भन्नेहरूलाई जवाब यही छ कि शिचाले स्त्रीजातलाई चरित्र भट्ट, धर्मच्युत र उद्धत कदापि गराउदैन, किन्तु उसको विपरीत सुचरित्र, धार्मिक र विनीत गराउँदछ, जुन शिचा द्वारा स्त्रीजातिको चरित्र खराब हुन्छ, त्यसलाई कोही शिचा भन्दैन, त्यो कुशिचा हो, चरित्र विगार्नु र धर्मबलको नाश हुनु यो शिचक वा कुशिचाको भरमाछ, पुरुषको स्वार्थान्विता, असहिचार र असत्कार्य यिनै तिन कुराले स्त्रीजातिको चरित्रलाई विगार्दछन्, पुरुष सुचरित्र भए भने स्त्रीहरू कहिल्यै कुचरित्र हुन शक्तीनन्,

4. Either, Summarise in your own words the hints regarding essay-writing as given in the *Prabandharachana Shikshā*. 10

Or, Which essay in the *Prabandharachana Shikshā* appeals to you most and why? Trace the leading ideas contained in it. 10

5. Render the following into Nepali :— 15

"Of the Indians who served with me in France, the Gurkhas were the first in the permanent trenches to bear the shock of a German attack. They laboured under great disadvantages in taking trenches too deep for their stature, and that at a time when rain and slush made it impossible to remedy the defect. They took time to accustom themselves to the uncanny conditions, but the soldier from Nepal has a big heart in a small body; he has the dogged characteristic of the Britisher; he will return if he can to a trench from which he has been driven, and it will not be easy to turn him out a second time. After the first shocks they pulled themselves together. Taciturn by nature, brave and loyal to a degree, the Gurkhas ended, as I knew they would, second to none."

6. Expand the idea contained in the following :— 10

सबैको गहना विद्या, विद्या नै हो महाधन,
विद्या कै हुन्छ सत्कार, विद्या कै गर चिन्मन,

7. (a) Explain and illustrate the following proverbs :— 7

- (i) अगुलोले हानेको कुङ्कुर बिजुली देखी तर्सन्छ,
- (ii) खाने पिने राम्रो चोट पाउने चामे,

(b) Give the figurative meanings of the following phrases and use them in sentences of your own :— 8

- (i) मामाको घर देखाउनु । (ii) लामुझात गर्नु ।
- (iii) कान समातनु । (iv) माढी खानु ।

8. Write an essay in Nepali on any one of the following subjects :— 20

- (a) The Gurkhas as a nation of warriors.
- (b) The advantages of the vernacular being the medium of instruction.
- (c) Any place of historical importance you have visited.

MARATHI

Paper-setter—PROF. D. R. BHANDARKAR, M. A., PH. D.

Examiner—MAHAMAHOPADHYAY PANDIT SITARAM SASTRI

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Write an essay in Marāṭhī on any one of the following :— 20
 - (a) Self-help.
 - (b) Kindness to animals.

2. Translate into Marāṭhī the following :— 15

Two-thirds of the population are addicted to the use of opium, and the tendency to the increase of crime, consequent thereon, must be admitted. When individuals are brought up before the magistrate, charged with thefts and burglary, nine out of ten invariably state that they committed the crime to procure opium. No extra tax is levied on opium ; but there is little doubt but that if a heavy tax were imposed on its cultivation, the drug would not be produced to such an extent, and consequently the price would be greatly enhanced, so that the raiyats could not afford to purchase it. The richer classes would then enjoy the luxury, while the mass of the people being gradually weaned from the habit by the increasing taxation on opium, would probably, in the course of time, give it up altogether.

3. Describe Govind Chimnaji Bhaṭe as a social reformer. 10
4. State how far the *Ushāhkāla* of Hari Nārāyaṇ Apte can be classed as a historical novel. 10
5. Form a critical estimate of N. C. Kelkār as a prose writer. 10
6. Explain the following in Marāṭhī :—

(a) टिले टोपी उंच दावी । जनीं नी एक गोसावी ॥

बबचा बर रंग सारा । पोटीं बिबयाचा थारा ॥

मुद्रा लाबितो कोकनी । मान उहावयासी जनीं ॥

तुका न्हचे ऐसी किती । नरका गेले पुढें जाती ॥

(b) चाली सिंहस्थ पर्वची । न्हाव्यां भटां भाली धची ॥

ब'तरों पापाच्या कोटी । बरी बोडी डोयी दाढी ॥

जें बोडीलें तें निघालें । सांग काय पालटलें ॥

पाप गेल्याची खुष । नाहीं पालटले बबगुष ॥

भक्ति-भावे वीष । तुका न्हचे बबचा शीष ॥

(c) चङ्ख्वा-झिला राखवें मुक्त केली
पदीं खागतां दिव्य होवोन गेली ।
जयां वर्षितां श्रीचखी वेद-वाणी
गुपची कदा राम दासाभिमानी ॥

(d) संत-संगें केली सर्व शास्त्रभाग ।
आणि ज्ञानयोग अप्रयासें ॥
पावीजिना देव संतसंगावीण ।
मार्ग हा कठीण विवेकाचा ॥
दंभ हा लौकीक विवेकें सांडीला ।
दुरी बीसंडीला अहंकार ॥

7. Amplify the following in Marāṭhī :—

15

दिसेना जनीं तेंचि शोधून पाहें । बरें पाहतां गूज तघेंचि आहे ॥
करें घेउं जातां कदा आकलेना । जनीं सर्व कोंदाटले तें कलेना ॥
म्हणे जाणतो तो मनीं मूर्ख आहे । अतर्कासि तकीं असा कीण आहे ॥
जनीं मीपणें पाहतां पाहवेना । तथा पाहतां वेगलें राहवेना ॥
जयें मचिका भचिलो जाणिवंची । तया भोजनाची रुची प्राप्त केंची ॥
अहंभाव ज्या मानसींचा विरेना । तया ज्ञान हें अन्न पोटीं जिरिना ॥

URDU

Paper-setter :—A. F. M. ABDUL KADIR, M.A.

Examiner :—MAULVI M. MAHFUZ-UL HAQ, M.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Re-write the following in your own words, avoiding the metaphors and similes :— 8

ای میری بلبل ہزار داستان ! ای میری طوطی شیوا بیان ! ای
صیری قاصد ! ای میری ترجمان ! ای میری رکیل ! ای میری زبان ! سچ
بٹا ترکس درخت کی تھنی اور کس چمن کا پودا ہے ؟ کہ تیرے ہر پھول

کا رنگ جدا اور تیرے ہر پہرل میں ایک نیا مزہ ہے۔ کبھی تو ایک ساحرِ فسون ساز ہے جسکی سحر کا رد نہ جادو کا اثار۔ کبھی تو ایک افعی جانگدز ہے۔ جس کے زھر کی دार نہ کاٹے کا منتر۔ تو وہی زبان ہے کہ بچپن میں کبھی اپنے ادھرے بولوں سے غیروں کا جی لہاتی تھی اور کبھی اپنی شوخیز سی ماں باپ کا دل دکھاتی تھی۔ تو وہی زبان ہے کہ جوانی میں کہیں اپنی نرمی سے دلوں کا شکار کرتی تھی اور کہیں اپنی تیزی سے سینوں کو فگار کرتی تھی *

2. Give the substance of Nazir Ahmad's discourse on عقل کی نارسائی 8
3. Give a description either of Constantinople or of the ancient monuments in Egypt, basing your information on the سفرنامہ of Shibli. 9
4. Give a brief description of the life of مرزا غالب, laying stress on the peculiarities of his (a) prose, and (b) poetry. 7
5. Explain in simple Urdū any five of the following couplets :— 10

آرام سے ہے کون جہان خراب میں
گل سینہ چاک اور صبا اضطراب میں
ہم بھی تسلیم کی خردالینکے
بے نیازی تیری عادت ہی سہی
ہے ہے مرا پہرل لے گیا کون
ہے ہے مجھے خار دیگیا کون
جہان تیرے جلوے سی معمور نکلا
پڑی آنکھ جس کوہ پر طور نکلا
لایا ہی مرا شوق مجھے پردے سے باہر
میں رزنہ بھی خلوتی راز نہاں ہوں
آراتے ہیں جو رخس ہمت کو سریت
وہ منزل کو زیر قدم دیکھتے ہیں

ای نرق کسی ہمد دمیرفہ کا ملنا

بہتر ہے ملاقات مسیحا ز خضر سے

کم ثباتی مری ہردم ہے مخاطب بہ حباب

دیکھیں تو پہلی ہم اس بحر سے ہوں پار کہ تو

6. Illustrate the uses of the following idioms in short sentences :— 10

ہاتھ آنا - آنکھیں چرانا - پانی پھیرنا - انگشت نما ہونا - جان پر کھیلنا -

7. Write down in your own Urdu the substance of the following lines :-15

لارہ مکالمے نے اس باب میں جو کچھ لکھا ہے اُس سے پایا جاتا ہے
کہ کوئی شخص غیر مادری زبان میں اعلیٰ درجہ کا شاعر نہیں ہو سکتا بیشک
اُنکا ایسا سمجھنا یورپ کی شاعری کے لحاظ سے بالکل صحیح معلوم ہوتا ہے -
کیونکہ یورپ کی شاعری درحقیقت نیچر کی ترجمانی ہے - اُسکا میدان
اُسی قدر وسیع ہے جسقدر نیچر کی فضا - اُسکے فرائض مادری زبان کے سوا
دوسری زبان میں جیسے کہ چاہئیں ادا نہیں ہو سکتے - بلکہ ایشیائی شاعر جو
اس طریقہ شاعری سے نابلد ہیں وہ اپنی زبان میں بھی اُسکے مشکلات سے
عہدہ برآ نہیں ہو سکتے *

8. Translate into simple and idiomatic Urdu :—

15

The history we have tried to trace of our origin and growth has valuable implications for us to-day in our effort to cope successfully with important problems. The clearest fact in our national life is that at bottom we are a nation of foreigners. The constituent elements differ only according to the length of their American domicile. Our history has proved that peoples of various races, of diverse traditions, customs, religions and languages can live together in peace and prosperity and build up a nation of striking unity.

9. Write an essay on one of the following subjects :—

20

(a) Urdu as an Indian Vernacular.

(b)

بنایا آدمی کو نرق ! ایک جزر ضعیف

اور اس ضعیف سے کل کام دو جہاں کے لئے

(c) Mīr ; a short sketch of his life—his personal traits of character—his style and peculiarities—his contribution to Urdu literature and his place among the noteworthy Urdu poets.

KHASI

Paper-setter—MR. ROY ROWLAND THOMAS, M.A.

Examiner—RAI BAHADUR DOHORY ROPMAI, B.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into Khasi:—

15

He did his best; he worked according to his lights; what virtue he knew, he tried to practise; what knowledge he could master, he strove to acquire. He was for ever drawing maps, for example, and learned geography with no small care and industry. But, as one thinks of an office, almost divine, performed by any mortal man—of any single being pretending to control the thoughts, to direct the faith, to order the implicit obedience of brother millions, to compel them into war at his offence or quarrel; to command, 'In this way you shall trade, in this way you shall think; these neighbours shall be your allies whom you shall help, these others your enemies whom you shall slay at my orders; in this way you shall worship God';—who can wonder that, when such a man as George took such an office on himself, punishment and humiliation should fall upon people and chief?

2. Compose a short story in Khasi illustrating the maxim that *either* pride goes before destruction, *or* honesty is the best policy. 10

3. Write an essay in Khasi on *one* of the following subjects:— 20

- (a) U briew un ioh la ka bainong.
- (b) Ka jingtip kaba rit ka long kaba mynsaw.
- (c) Ka jingkhahi pateng ha ri Khasi.
- (d) Ka kam kaha phi sugewbha eh.

4. *Either*, Phi tip aiu shaphang ka Shillong na ka *History jong ka ri Khasi*? 15

Or, Phi tip aiu na ka *History jong ka ri Khasi* shaphang 'Ka jingtharai jong ki Nongwei shaphang ki Khasi'?

5. Explain with reference to the context:— 15

Either, 'Ba ioh daitpong ia la ka langthohdoh.'

Or, 'Ioh hap u tangon u lymban iapduh.'

6. Kumno u kren u Eklesiastis shaphang ka jingstad bad ka bor haka lynnong kaba IX? 15

7. Kumno u nongthoh jong phi u ong shaphang kaba janai ha ka kam? 10

ENGLISH

ALTERNATIVE PAPER

Paper-setter—MR. HIRANKUMAR BANERJEE, M.A., B.LITT.

Examiner—MR. K. C. ADDY, M.A. (Cal.), B.A. (Oxon.).

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. *Either*, Relate briefly the events, as Pepys describes them, of the day on which Charles the Second was crowned. 15

Or, What account does Franklin give of his habits of study in early life and of the efforts that he made to attain perfection as a writer?

2. *Either*, Reproduce the substance of Goethe's remarks on English poetry. 15

Or, What does Mill tell us about his first impressions of Wordsworth's poetry? How does he account for the appeal that this poetry made to him?

3. Explain any *two* of the following extracts:— 20

(a) The cheerful Goldsmith loses himself in elegiac sentiments when, in his *Deserted Village*, he draws us a picture, as sad as it is charming, of a lost Paradise which his Traveller wanders over the whole earth to find again.

(b) Even when no great right has been done, and the being under review has merely struggled along the borderland of good and evil with conspicuous lapses, that struggle itself is something holy.

(c) God help the poor little hearts who are early plunged among the breakers of the spirit! They should dwell by shallow, sunny waters, plucking the lilies of optimism.

(d) The difference between a good walker and a bad one is that one walks with his heart and the other with his feet.

4. *Either*, How does Belloc compare the South Country and its people with the people of the North and West of England? In what way does he associate the South Country with his visions of future happiness? 15

Or, How does Walter de la Mare describe the influence of music in his poem on the subject?

5. *Either*, Narrate the story told by the poet in his *Flannan Isle*. 15

Or, Write an appreciation of the character of Father Gilligan. What lesson do we learn from the incident related in the *Ballad of Father Gilligan*?

6. Explain any *two* of the following:— 20

(a) He came from higher up in the pass
Where the grist of the new-beginning brooks
Is blocks split off the mountain mass—
And hopeless grist enough it looks
Ever to grind to soil for grass.

- (b) Time has never journeyed to this lost land,
 Crakeberries and heather bloom out of date,
 The rocks jut, the streams flow singing on either hand,
 Careless if the season be early or late.
 The skies wander overhead, now blue, now slate:
 Winter would be known by his cold cutting snow
 If June did not borrow his armour also.
- (c) If I should die, think only this of me:
 That there's some corner of a foreign field
 That is for ever England. There shall be
 In that rich earth a richer dust concealed.
- (d) With this ambiguous earth
 His dealings have been told us. These abide:
 The signal to a maid, the human birth,
 The lesson, and the young Man crucified.
-

ORIYA VERNACULAR

Paper-setter—MR. PRIYARANJAN SEN, M.A.

Examiner—MR. MAHESWAR DAS, M.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Explain, with reference to the context, two of the following passages:—

20

- (a) କାହିଁ ଗଲ ସେହି ବିଜୟ-ଉତ୍ସବ ?
 ଭୂଷିଲ ତୋ ବସେ ବିଜୟିକ ଶବ !
 ଅସିଥିଲେ ଲୋଡ଼ି ଉତ୍ତଳର ବିତ୍ତି,
 ବିହ୍ୱଳେ ଉତ୍ତଳ ତାର ପ୍ରାୟଶ୍ଚିତ୍ତ !
 ଭୁ-ରଙ୍ଗରେ ଯାକ କମ୍ପିଲ ଭୂତଳ,
 ମସି ତଡ଼ିବାକୁ ଏବେ ନାହିଁ ବଳ !
 ଦ୍ୱି ସପ୍ତ-ଭୁବନ ଯେ ମଣିଲେ ଅଳ୍ପ,
 ଅଗ୍ନି ଲେ ସେ ସପ୍ତ-ବୃକ୍ଷସ୍ତର ତଳ ।
- (b) ଅହା, ଏ ଶୋଭାର କାହିଁ ପଟାନ୍ତର ?
 ଥିଲେ ଥିବ ସ୍ୱର୍ଗେ, ମର୍ତ୍ତ୍ୟେ ଅଗୋଚର ;
 ପାସୋରବ ଦେଖି, କହ, କେହ୍ନୁ ଜନ
 ଏ ଶୋକ-ପାସୋର ଅସୁରଭୁବନ ?

ଭାରତ-ରକତ କେଉଁ ରୂପପାୟୀ
 ତୁମ୍ଭ ଦେବ ଏହା ଅରେ ମାତ୍ର ଧ୍ୟାୟି ?
 ବଚନବିଷୟ ନୁହଇ ଏ ଛବି,
 ହୃଦ ସେ କେବଳ ପାରେ ଅନୁଭବି ।

(୧) ସଙ୍ଗୀତ ଆବେଶେ ନାନାରୂପେ ମନ
 ଅସ୍ମିନ୍ନିୟଦେଶେ କରେ ବିଚରଣ,
 ଶୂନ୍ୟତା ଶୂନ୍ୟେ ଶୂନ୍ୟେ କେଉଁ ସ୍ଥାନେ
 କି ଲେଖିବା ଆଶେ ସେହି ତା ନ ଜାଣେ,
 ଧନ୍ୟ ସେହି ଯାର ଆଜ୍ଞା ଶିରେ ଧରି
 ଏଲାଲା ରରନ୍ତି ଦେବା ବାମାଣ୍ୟ ;
 ଧନ୍ୟ ରଥେ । ତୁମ୍ଭ ଜନ୍ମ ଶୁଭକ୍ଷଣେ,
 ମୃତ୍ୟୁଞ୍ଜୟ ତୁମ୍ଭେ ଉଚ୍ଛଳିବୁ ବନେ,
 ତୁମ୍ଭ ମାଟି ଦେହ ପ୍ରାପ୍ତିଛୁ ଶୁଶ୍ରାବନ,
 ମାତ୍ର ଯଶୋଦେବେ ତୁମ୍ଭେ ଆୟୁଷ୍ମାନ !

2. ଅଜ ରକ୍ଷା ନାହିଁ । ଯେଉଁ ଗମ୍ଭୀର-ସ୍ଵରରେ ଲୋକଟି
 ଆଗନ୍ତୁକ ପ୍ରଭ ଏ ଆଦେଶ କଲା, ସିଂହାସନୋପବିଷ୍ଟ ସମ୍ରାଟ ସେପରି
 ସ୍ଵରରେ ଆଦେଶ କରି ପାରିବେ କି ନାହିଁ ସନ୍ଦେହ । ଆଗନ୍ତୁକ
 ଚନ୍ଦ୍ରପୁରଜିଙ୍କା ପ୍ରାୟ ଠିଆ ହୋଇଥିଲା ଏବଂ ଅଶ୍ରୁ-କେଶ-ବନ୍ଧ-
 ପୁରଜିଙ୍କା ବାଜିକରର ଆଦେଶ ପାଳିଲା ପ୍ରାୟ ପାଟଳୀବୃକ୍ଷ
 ଆଡ଼କୁ ଧୀରେ ଧୀରେ ଗଲି ବିସ୍ତାର କଲା । ପାଟଳୀବୃକ୍ଷର
 ନିକଟବର୍ତ୍ତୀ ହୋଇ ଆସିଲାକୁ କହିଲା । “ ପ୍ରଭୁ ତ ସମସ୍ତଙ୍କର
 ଜୀବନ ନେବାର ବିଘ୍ନ କରୁଛନ୍ତି—ଦେହରେ ତ ପ୍ରାଣ ନ
 ଥିଲାପରି ଦେଖାଣି—ବାଲା ଯାହା ଅଛି ତୁମ୍ଭେ ନେବ ତ ନିଅ ।”

Either, Explain the above extract with reference to the context.

15

*Or, Write a note on the part played by ବୁଢ଼ାଲିଙ୍ଗ
 in the setting of the story told in the ବିକାସିନୀ*

3. Compare Sashi Bhusan Rāy and Rām Sankar Rāy as writers of Oriya prose, confining your remarks to the descriptions of nature. 12

4. Write an essay in Oriya on *one* of the following subjects:— 20

(a) The pen is mightier than the sword.

(b) The temple of Jagannāth.

(c) Untouchability: how far it is a social evil.

(d) Summer in Orissa.

5. Translate into Oriya:—

If you will believe me, you who are young, yours is the golden season of life. As you have heard it called, so it verily is the seed-time of life; in which, if you do not sow, or sow well, how can you reap well? In the course of years, if you look back and if you have not done what you have heard from your advisers, you will bitterly repent when it is too late. The habits of study acquired at the Universities are of the highest importance in after-life. 15

6. Construct sentences to illustrate the following:— 6+6+6

(a) The antonyms of ସମ୍ମତି, ବର୍ତ୍ତମାନ, ପରିଶ୍ରମ ;

(b) The feminine forms of ମନସୀ, ବାୟୁସ, ଅଭ୍ୟାସ ;

(c) The difference between ଭବିଷ୍ୟତ and ବର୍ତ୍ତମାନ

MANIPURI VERNACULAR

Paper-setter and Examiner :—Mr. DWIJAMANI DEBSARMA, M.A.

Candidates are required to give their answers in their own words as far as possible.

The figures in the margin indicate full marks.

1. Translate into Manipuri :—

15

Truth has its temple, not in a glade, nor on a riverbank, but in the hearts of wise and contemplative men. So lost are beholders in admiration of its unearthly grandeur that they fail to perceive whether the walls are made of polished gold or else of precious stones. Few there are that know of its existence, or having known, care to journey towards it. Among such as boldly set out to seek it, many are lost in mazes without end. Of the few that find and enter it, fewer still care to think of the inner sanctuary.

2. *Either*, Enumerate, according to Kh. Chaoba Singh, the various causes of fear of death. 14

Or, Give the character of *Kaboklei*.

14

3. Explain in Manipuri any *three* of the following passages with reference to the context. 7+7+7

(a) চাঁদা শাংপা ইউনাইট,

চিন্নদনা কেনখিবা

বলকই দে ।

(b) ইঠৈ সঁকদবা নঙোন্দা ঐনা ভজ্জী তুলি পীরহুনা করি কারকম লৈগনি ?

(c) কেথোক মৌথোকপগা লুবা নানবগা অমরোমদা নকনবা মরি লৈবগুম অমরোমদা থাপনগদবা মরমসুটৈ ।

(d) শকলোনবু চামদি
থোংথাংবু খুদিংদি
উংলি ঐঙোন্দদি
অহুবু চংলি খংদনা ।

4. Give in Manipuri the substance of the following passage :— 10

পাঠৈ লৈজবা তাইবংমীগী চংনফম্বু মৌঙইবগী থমোইতনি । বাখন্না কনাগীদমক অরাম খোরাংবা পুম্মক কাঙহুনা নোংমদোন পন্দোন লোন্না পাইখংলিবা, সমুজ্জ ঙ্গা ফংনা লুপলিবা, কনাগীদমক অমদা লোন্না কুমহুনা ফংঙমজ্জবা যাইবু তাল্লিবা, কনাগী মরমগীদমক অবাংবা লোইবী চাংখাং কাহুনা হন্দুনা হন্দুনা শিদহিদাক থিৰিবা ! অরেখনি পুম্মক অরেখা ডাক্তনি, মৌঙইবগী পুম্মক অসিগী মকবু মহাকী থমোইতনি । হে বীণা ! নংনা কনাগীদমক অয়াছা হুৰ পান্দুনা নীংথিবা কোলোই শক্লিবা ! হে আশা ! নংনা কনাগীদমক হুংঙাইবগী জেচেন্দা অনৌ অনোবা ঙ্গেথক হৌহন্দুনা অঙাওবগী পান্দমগুম মৌঙইবগী পুকনীংবু চোংহল্লিবা, অমসুং নোংথাং কুপ্গুন্না পুকনীংবু মৌকুপ খুদিংগী মমাই লৈহল্লিবা ! অরেখনি পুম্মক অরেখা ডাক্তনি ।

5. Correct, giving reasons, the following :— 10

- (a) নহা ওইরিঙৈদা নহৈ নীংথিনা তঙগী অরেজা মতমনি ।
(b) পোং অহম অসিগী মরক্তা অসিনা হেজা ফজৈ ।
(c) অফবা মীনা নীংজবদি ঙ্গেথগী কুপা লাকই ।
(d) অম্বক অঙনবগী হুংখা থোকপা হৌরকপদা পুথিদ্দা থরো ময়াম খাংপা উরগা কনাগী পুকনীং হরাওরোইদগে ?

6. Discuss fully the possibility of the underlined being parsed as a preposition. 5

উ অসিগী মখাদা নিপা অহু লৈপহৌবনি ।

7. Write an essay in Manipuri on any one of the following subjects : 25

- (a) Choice of books.
(b) Female Education.
(c) Religious festivities of Manipur.

TAMIL VERNACULAR

Paper-setter and Examiner—MAHAMAHOPADHYAY VEDANTAVISARAD
N. S. ANANTAKRISHNA SASTRI.

Candidates are required to give their answers in their own words as far as practicable.

Any SIX questions should be answered.

1. குறள் பாவின் இலக்கணம் யாது ? திருக்குறளின் வரலாற்றை விளக்குக.

2. அடியிற்கண்ட சொற்களடங்கியகுறள்களை வரையுத :—
(a) கடுவிகந்து ; (b) மனற ; (c) பொறை ; (d) தாளாற்றி.

3. கீழ்க்குறித்த சொற்களின் பொருளை எழுதுக :—(a) ஞான்றும் ; (b) ஒறுத்தார் ; (c) அழுக்காறு ; (d) வெறிய ; (e) புன்மை ; (f) சீர்மை ; (g) இலன ; (h) ஊருணி ; (i) அற்றலின்பின் ; (j) நத்தம்.

4. அடியிற்கண்டகுறள்களைப் பதவுரை தெளிவுரைகளுடன் விவரித்து இக்குறளடங்கிய அத்தியாயத்தின் பெயரையெழுதுவும்.

(a) மறப்பினு மோத்துக் கொளலாகும் பார்பான் பிறப்பொழுக்கங் குன்றக்கெடும்.

(b) கண்ணின்று , கண்ணறச் சொல்லினுஞ் சொல்லற்க முன்னின்று பினனோக்காச் சொல்.

(c) மறந்தும் பிறன்கேடு சூழற்க சூழி னறஞ்சூழஞ் சூழ்ந்தவனகேடு.

5. அப்பரின் மகிமையின் வரலாற்றை விளக்கவும்.

6. ஸம்பந்தமூர்த்திமுத்தி பௌத்தமதத்தை வெல்லியவரலாறு யாது ?

7. திருவள்ளுவரும் திருக்குறளும்

பெரியபுராணமும் நாயனார்களும்.

இவ்விரண்டிலொன்றையொட்டி யோர் நீண்ட வியாசம் எழுதவும்.

8. Translate the following passage into Tamil:—

Ram is a great believer in prevention being better than cure. But he also likes to make sure that in the case of prevention letting him down, he can soon put his hands on the cure.

This was evident when I called round on him and helped him pack his luggage for his summer holidays. Besides the piles of clothing, tennis rackets and other paraphernalia which people take away with them, sundry and rather astonishing articles were carefully awaiting turn to go into Ram's trunk. "What on earth are these for?" I queried. "In case of holiday mishaps" answered Ram readily. "Look here, will you pass over the stuff? I'll put them in the trunk." "Right-o" I agreed.

KANARESE VERNACULAR

Paper-setter and Examiner—MR. P. APPAJI RAO, B.Sc.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into Kanarese:—

15

'And is it thus the most renowned Prince of Frangistan repays benefits done to his royal person?' said El Hakim, exchanging his humble and stooping posture for an attitude lofty and commanding. 'Know then,' he said, 'that through every court of Europe and Asia, wherever harp is heard and sword worn, wherever honour is loved and infamy detested, to every quarter of the world will I denounce thee, Melech Ric, as thankless and ungenerous; and even the lands—if there be any such—that never heard of thy renown, shall yet be acquainted with thy shame!'

'Are these terms to me, vile infidel?' said Richard, striding up to him in fury. 'Art weary of thy life?'

'Strike', said El Hakim. 'Thine own deed shall then paint thee more worthless than could my words, though each had a hornet's sting.'

Richard turned fiercely from him, folded his arms, traversed the tent as before, and then exclaimed, 'Thankless and ungenerous! As well be termed coward and infidel! Hakim, thou hast chosen thy boon; though I had rather thou hadst asked my crown-jewels, yet I may not, king-like, refuse thee. Take this Scot, therefore, to thy keeping; the provost will deliver him to thee on this warrant.' He hastily traced one or two lines, and gave them to the physician. 'Use him as thy bond-slave, to be disposed of as thou wilt: only let him beware how he comes before the eyes of Richard. Is there aught else in which I may do thee pleasure?'

2. Write an essay in Kanarese on any *one* of the following subjects:— 20

(a) The uses of iron and steel in the household, in the arts and crafts, in engineering, in various other ways.

(b) Read less and think more.

(c) Cleanliness is next to godliness; personal hygiene; value of knowing what our human body is and the various uses of each organ—internal as well as external.

(d) A man is a social being.

3. Write a letter to your father in Kanarese, explaining what you propose to do after completing your university course. 15

4. Explain the ideas contained in the following lines:— 10

ತಿರುಗಿದನು ಬಲಕಾಗಿ ಹರ ಭೂ |

ಧರವನೇಳಿವ ಹಬ್ಬುಗೆಯ ಹರ |

ವರಿಯ ಯೋಜನ ಚದರದಳತೆಯ ಕನಕಮಣಿ ಮಯದ |

ಪರಿವರಿಯ ಪುತ್ಥಳಿಯ ಚಿತ್ರದ |

ಧರಧರದ ನೆಲೆನೆಲೆಯ ಮಣಿಮಂ |

ದಿರವ ಕಂಡನು ಕುಂಭಕರ್ಣ ನಿಶಾಚರೇಶ್ವರನ ||

5. Write in a few words the story of ಪ್ರಮೀಳೆ. 10

6. Name the best character in *Kuli Channaiya*, and show how each person contributes to the development of the story. 15

7. Trace the various kings before the period of Raghu and describe the king-like attitude shown by each. 15

MALAYALAM VERNACULAR

Paper-setter and Examiner—REV. C. E. ABRAHAM, M.A., B.D.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Answer Questions 6 and 7 and any other THREE.

1. സംബന്ധമായുള്ള യുദ്ധം മുതൽ വിജയന്റെ ചരിത്രം ചുരുക്കി എഴുതുക. 16
2. ഗുണസുന്ദരിയെക്കുറിച്ച് എന്തറിയാം? 16
3. “ലീല” യിൽനിന്ന് കാഥിതത്തെ ആചാരമയ്യാദകൾ വിവരിക്കുക. 16
4. മാതൃവികയുടെ സ്വഭാവം പണ്ണിക്കുക. 16
5. രാജധർമ്മത്തെക്കുറിച്ച് ലീലയിൽനിന്നും മാതൃവികാഗ്രിമിത്രത്തിൽനിന്നും എന്തു പറിക്കാം? 20

6. Translate the following into Malayalam:—

The one outstanding personality, whose presence saved Bengal at this crisis, was the great Raja Ram Mohun Roy. Towering above his contemporaries, solitary and majestic, this extraordinary genius seems to have measured accurately the force of every new current as it flowed quickly past, and to have steered his own course with an almost unerring precision. As practical as Macaulay, he was no mere opportunist. He was a true prophet, and had the prophet's sacred fire of enthusiasm. On the literary side he was one of the most ardent promoters of the new Western learning, and eagerly helped forward Macaulay's programme. But the best energies of his marvellously full life were directed to re-create in the heart of the Bengali people that true reverence for the Indian past which should lead to a revival of their own Sanskrit classics. Above all, he did not despise his Bengali mother-tongue, but brought it back into full literary use. Debendranath Tagore, the father of Rabindranath, was the next outstanding figure in the Bengali literary revival. His work and influence lasted for more than half a century. If Ram Mohun Roy may be likened to the root of this tree of literature, planted deep in the soil, Debendranath Tagore may be compared to its strong and vigorous stem, and Rabindranath, his son, to its flower and fruit. Rarely in the history of literature can such a direct succession be traced.

7. Write an essay on *one* of the following:—

32

- (a) The pleasures of gardening.
- (b) The sacred rivers of India.
- (c) The spirit of adventure.
- (d) The land and people of Kerala.

—

MODERN ARMENIAN VERNACULAR

Paper-setter—MR. M. J. SETH, M.R.A.S.

Examiner—MR. ZEBEDEE HANANIAN.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Write in Modern Armenian the life of Խաչատուր Մարութեան, or Սեբուսթիանոս Մարութեան: 15

2. Explain fully in Modern Armenian:— 15

Սարգիս ոմանք Վերազանց պատուոյ և աստիճանի իսկ հռչակաւոր լեալ են վասն համեստութեան իւրեանց ի զգեստս: Սեբն Միլէքսանդր զգենդր միշտ անպաճոյճս որպէս զմի ի ստորին պաշտօնատարաց իւրոց: Լատովն մի ի նախարարաց Հոռվմայեցոց չզգենդր երբէք պարեգօտ ինչ առաւել քան մի հարիւր դահեկանաց արժէից, և բազմիցս ասէր նա թէ ծանրագին համարէր զայն ամենայն, որ չէր ինքեան պիտոյ, թէ որքան և դիւրագին էր այն: () Գօստոս կայսր, որ իշխէր գրեթէ ի վերայ բոլոր նախածանօթ աշխարհի, զգենդր հանդերձս կազմեալ ի կնոջ և ի դստերէ իւրմէ, և ընկողմանէր յանկողին մի, ոչ առաւել փափուկ քան զանկողին միոյ ի հասարակ ժողովրդոց իւրոց:

3. Write an essay in Modern Armenian on *one* of the following subjects:— 20

- (a) Ուսումն մայրենի լեզուի:
- (b) Հայրենասիրութիւն:
- (c) Հնդկահայերի ներկայն և ապագայն:
- (d) () տարամոլութեան վտանգն և վնասն:

4. Translate into Modern Armenian:—

15

There is another aspect of the case. What right have we to deny our womenfolk the privileges which the advances of civilization and science offer us? And what right have we to shut them off from the beauties of nature which the Great Creator meant for us all alike? The activity of the west planted on the grace and charm of the east can work wonders. I have experienced it. God knew what He was about when He created men and women. He meant the qualities of the one to supplement the qualities of the other in the work of the world.

5. Frame sentences in Modern Armenian to illustrate the following words:—*ի տրիտուր, յաղագս, մտայնութիւն, նիւթապաշտ, բարոյական, գաղափարական, զուգադիպութիւն, ըստ որում, բարեացակամ, նախանձախնդիր* :

10

6. How many kinds of verbs are there in the Armenian language? Give examples.

5

7. Translate into English:—

15

Հայերը դեռ հին ժամանակներում էին ճանաչել փառթամ և վաճառաչ Հնդկաստանի ճանապարհը: Սիջին դարերում լեռնեցի վաճառականներն էին երևում Հնդկաստանի առևտրական հրապարակներում, նրանք էին որ իրանց մայր եկեղեցւոյ համար գնեցին Հնդկաստանում մի բիւրեղեայ ջահ որ մի քանի միլիոն ֆրանկի արժէք ունէր: Սակայն, որքան կարելի է նկատել, այս երթևեկ մի վաճառականութիւն էր, և գաղութներ դեռ չկային: 16րդ դարից սկսած է, որ հետզհետէ առևտրական գաղութներ են երևան դալիս ծայրագոյն արևելքում: Հայ վաճառականութիւնը զարգանում է, որքան Հայաստանում ընկնում է հին առևտրական կարգը:

8. How many kinds of adjectives and adverbs are there in the Armenian language? Give examples.

5

MODERN TIBETAN VERNACULAR

Paper-setter and Examiner—DR. SATKARI MOOKERJEE, M.A., PH.D.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate the following passage into Modern Tibetan:— 40

The social life of the Burmese woman is every bit as independent as her business activities. There appears to be no distinction between conventionality and unconventionality. No chaperon is necessary in that land of freedom. The sexes take part in the same games, attend the same class of amusements, and to all intents and purposes are one. In spite of this free comradeship there is comparatively little immorality. The world has been taught to believe that the Burmese woman is morally lax; but this is not true. She is simple in her susceptibilities, but constant as a dove to her mate.

The position that woman occupies in Burmese society is due to Buddhism, the dominant religion of the land. This probably is the only one of the great religions of the world that does not introduce invidious sex distinctions among its dogmas and doctrines. In Burma the tenets of Buddhism are strictly adhered to and regularly applied to every-day life; and it naturally follows that in the pagoda land woman should have absolutely even privileges with man in every respect—whether it be a matter of money, property rights, divorce, or any other vital thing affecting the life of human kind.

2. Write a short account of Jowo Atisa's life and his activities in Suvarnadvipa. What was his purpose in undertaking the journey to that land? 10

3. Give a summary of the story in the Buddha's life which interests you most in the *Pag-sam-ñvi-kin* and point out the moral.

4. Conjugate any *three* of the following roots in the past and future tenses, and give their forms in the imperative mood, with illustration of each root in any one of the forms:— 12

འཛོམ། འབྲོལ། གསོད། གཏོག། and འབྱེད།

5. Correct the errors in the following sentence.— 5

དང་མངས་ཀྱི་ཁམ་གང་ལ་ཡང་བདག་དབྱང་དེ་ལྟར་བྱས་དེ་ཁྱིམ་བཅད་ཤེས་པའི་ཀྱུ་

ཁྱོན་དང་གཞུང་ཆེ་བ་བར་སི་རྣམས་གཞིན་དུ་དཀོན།

6. Write an essay in Modern Tibetan on any *one* of the following subjects:— 25

- The benefits of the railway system.
- The necessity of mass education.
- The utility of foreign travel.

GUJARATI VERNACULAR

Paper-setter—DR. I. J. S. TARAPOREWALLA, B.A., PH.D.

Examiner—MR. HARGOVIND DAS SETH.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

પાઠેશ્વર ત્રણ સવાલો અને બાકીનામાંથી કોઈ પણ પાંચ ના જવાબ આપો.

1. નીચેના વિષયો પૈકી કોઈ પણ એક પર નિબંધ લખો :— 20

(ક) અમારી કોલેજ.

(ખ) ગુજરાતમાં આશ્રયજીવન.

(ગ) સીનેમા.

2. નીચલાનો ટુંક ચાર આપો :— 15

મનુષ્ય જીવનનો ચંત લાવનારી શિક્ષાઓ અમારા રાજ્યમાં ઓછી થાય એમ અમે ઈચ્છીએ છીએ. જે જીવન માણસ કોઈને આપી શકતો નથી તેજીનવી લેવામાં જરા પણ ગૌરવ નથી. એટલે આકામમાં ન્યાયના આધુનિક સિદ્ધાંતો જરાઢીલાકરી અમે અમારી ખાસ સત્તાને આધારે આરોપી બ્રાહ્મણની ફાંસીની સજા રદ કરીએછીએ, ન્યાયનો સાચોતો જનાર તે એક ઈશ્વર છે. સાચો ન્યાય એજ આપી શકે એમ છે. એટલે એ જગત નિયંતાના મહાન ન્યાય તેત્તના એક અલ્પાંશ તરીકે, કામ કરવામાં અમારી ભૂલ થઈ હરોતો એ ખલકનો ન્યાયાધીશ એ ભૂલ સુધારશે. અમારી એ પ્રાર્થના છે કે, આરોપીને ન્યાય આપવામાં અમે ચૂક્યા હોઈએ તો, એ ના ગુનહાને યોગ્ય શિક્ષા તું એકજ ઋતુ ચક્રે થતાં સુધીયાં આપને અને આન્યાયનું એ કલક હોય તો ધોઈ નાખજે.

3. નીચલાનો ગુજરાતી અનુવાદ કરો :— 15

There are definite scientific reasons why white cotton suits are by far the most comfortable as well as logical costume for men in hot weather. Black, or any dark colour, absorbs solar heat like a blotter will soak up ink. White, on the other hand, reflects the heat and absorbs very little of it. This can be very easily demonstrated by a simple experiment. Take a block of ice and place it in the sun on a warm day. Next take two strips of cotton cloth, one black and the other white, and place them over this block of ice. It will be found that much more ice is melted down from under the black strip than from under the white.

4. માધવ પ્રધાન આલા ઉદોન ખીલજને કેમ મળવા પામ્યો તેનું વર્ણન કરો. 10

5. દેવળ દેવી પર પ્રેમનીશી અસરો થઈ તે લખો. 10

6. ન્હાનાલાલની કવિતા “વીરની વીદાય” માંથી વીરરસ કેમ ઝરે છે તે સમજાવો. 10

7. કલાપીનાં જે કાવ્યો તમે વાંચ્યાં હોય તેમાં સૌથી ઉત્તમ તમને કયું લાગે છે? સવિસ્તર કારણો દર્શાવો. 10

8. નરસિંહરાવના કોઈક કાવ્યનો ટુંક સાર આપો. 10

અથવા,

નર્મદાશંકરમાં કેટલે એરો દેશ ભક્તિ જડે છે તે લખો.

9. નીચેનાં પર ટુંક ટીકા લખો :— 10

(ક) આજે નથી પાણું ફરવું સમરા ગણુ છે અવસાન;
રિપુને હણવું કેમરવું છે એજ અમારી દહાણુ.

(ખ) પીવા તૃષિત જનને પેળીએ ન દેવું,
સિંધુ શીખ્યો કૃપણ ભૂપનું કામ એવું.

(ગ) અર્પી દઉં સો જન્મ, એવડું, મા, તુજ દહેણું.

(ઘ) જહાંપન્ડા, જેટલું કરોછે તેટલું શરેહથી ઉલટું છે.

(ડ) સૂરજ બાપજી, જે મારામાં સત હોય તોયારા હાથને દાઝવા દેતોમાં.

TELUGU VERNACULAR

Paper-setter and Examiner—DR. B. RAMCHANDRA 'RAU, M.A., PH.D.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate the following passage into idiomatic Telugu: — 25
Human life has become a world-wide thing, but governments remain cramped and partial things. More and more people are coming to realize this. Yet none of us know clearly how to change over to a more comprehensive and securer way of running the world. And it is no good mincing matters when it comes to saying why we have not this universal well-being at the present time. Most of our rulers and directors are, to put it plainly, narrow-minded, self-centred, mentally indolent, pompous and pretentious creatures of the past. They are unwilling to put their minds through the humble and strenuous mental toil needed to raise the standard of their work, and we others are fools enough to tolerate the mismanagement. These ruling and controlling people have got enough for themselves, they stick to the controls like barnacles, they live in relative comfort and immense dignity, chiefly engaged in the defence of their own conceit, and they do not care a rap what happens to the mass of us, and the mass of us lacks the spirit, will and understanding to call them to account.

2. శ్రీకృష్ణార్జునల సంవాదము విపులముగా వ్రాయుడు. 20

3. “అపూర్వ నాగరికత” అను నామము సార్థకమా, కాదా? 20
“నాగరికత”. ఎట్లుండవలెనో వ్రాయుడు.

4. ఈ క్రింది పద్యమునకు తాత్పర్యము వ్రాయుడు. 10

గ్రామమునకు సమద గజకుంభ మాంసంబు

దొరక కున్న, సింహమరసి యరసి

వలచి నిష్ఠురోప వాసముండును కాని

కొసరి కొసరి గడ్డి మెసవ జనునె?

5. “యుద్ధము” వలన కలుగు లాభనష్టములను గురించి వ్యాసము వ్రాయుడు. 25

SINHALESE VERNACULAR

Paper-setter—REV. P. SEELANANDA.*Examiner*—MR. DEVAPRIYA WALI SINHA, B.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Explain the following:—

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තුන් ලෝ නමා නතුකළ රවුල සොහො වු රු
තුන් කල් බලා රම්දුව වූ ඉටු මතු රු
තුන් වේ ඇදුරු පුලනිසි කුලමිණිවිතු රු
තුන් විටෙකැමැ වදු එ සුරදු පානබු රු.

2. Write a short note on the author of Subhasita or Sila-
lihini-Asna.

20

3. Translate into English:—

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සෝවාන් රජ මහපල සුවයෙන් සක්මන්කොට
යැපෙයි, රජු සිරුර දිලියෙයි, අපපා නිසේ
යැපෙයි, පිළිවිස සක්මනින් යැපෙන සේ
සිරුර දිලියෙන සේ අසා සක්මන් නොකොට
දුන මැනවැයි පියාණන් පතුල කරයෙන්
පලා දුණු තෙල් ගල්වා කිහිරි ගුරෙහි
විවි යන අනු කරණ ඇඟිකොට පක්භ

ඒ රජ පුච්ඡනමයෙහි දැනැබෙත් හි
වහන් ලාගෙණු ගියේය. සඟුන්
ඉඳිනට අතුල කලාලක නොදෙව්
පසින් ඇත්විණ. වේ එහි එලයි.

4. Explain the Kālagōla Prasna or Pandit Mahowsadha's life.

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5. Write an essay in Sinhalese on *one* of the following:—

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- (a) C. R. Das.
(b) The Summer of Bengal.
(c) Duty to your Country.

BURMESE VERNACULAR

Paper-setter—MAUNG BA, B.A.*Examiner*—PROF. PE MAUNG TIN, M.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. အောက်ပါစာပိုဒ်၏ အဓိပ္ပာယ်ကို အကျဉ်းရေးသားဖော်ပြပါ။

ပုဗ္ဗကမ္မ၊ ရှေးကအကြောင်း၊ ထုသိုလ်ထောင်းကြောင့်၊ ဆင့်လောင်းမပြတ်၊ ထူမြစ်ဘွယ်လည်း၊ ပျိုရွယ်စဉ်ကြိုက်၊ အပျော်ထိုက်လျက်၊ မှတ်ပိုက်မရှိ၊ မေ့လျော့ဘိ၍၊ သထိမသွင်း၊ တရားဖွင့်သော်၊ အိုမင်းခါမှ၊ နောင်တရသည်၊ ရှေးကစဉ်လာ၊ ကမ္မည်းမှာကား၊ ပညာထူထ၊ လင်ချိန်ကလျှင်၊ မရပညာ၊ မသင်ပါအံ့။ ဥစ္စာဓန၊ ရှာချိန်တမူ၊ ထုံလပဲ့ကြွေး၊ မဆည်းဘူးအံ့။ တထူးဆိုရေး၊ အသက်မွေးလည်း၊ အလေးတောင်းတင်း၊ လှည့်စားခြင်းနှင့်၊ ပျက်ယွင်းတရား၊ တန်ဆိုးဝါးအံ့။ ကျင့်မှားယုတ်သိ၊ ပါဏာတိကို၊ ပြုမိတတန်။ မိန်းမမွန်တို့၊ အလွန်မျှားစွာ၊ ရှိတုံပါလျက်၊ ကာမသုတောင်၊ ဖြစ်ထွတ်အောင်လျှင်၊ မရှောင်ခဲ့မိ။ ဥစ္စာရှိလျက်၊ ဖြန့်ချိခါန၊ မဝေငွေတည့်။ မိဘတို့အား၊ ထတ်နှိုင်းငြိုးလျက်၊ တရားညီရေး၊ မထုပ်ကျွေးအံ့။ မွေးမိမွေးတ၊ သွန်သင်ပြသည်၊ ဆုံးမမန်မန်၊ စကားမှန်ကို၊ လွန်၍ကျင့်မိ။ သီလရှိသား၊ ကြားသိကြယ်ဝန်း၊ သူတော်ထွန်းသည်၊ ရဟန်းပုဏ္ဏား၊ သူတို့အားကို၊ ထံပါးနီးရင်း၊ ဆည်းကပ်ခြင်းနှင့်၊ ချတ်လွင်းမိလိုက်၊ သုစရိုက်ဟု၊ ကောင်းမြိုက်တရား၊ ရှိပါငြိုးလျက်။

ခေမ္မာဒသတိ၊ မကျင့်မိယ၊ နောင်ပြီများစွာ၊ ဆိုသောခါတွင်၊ မရဏာ သန္တ၊ နီးကာလမှ၊ ကြောင့်ကြပောက်ပြန်၊ စိုးရိမ်ထွန်သည်၊ ဆယ်တန် နောင်တ၊ ရှိပြန်ရက၊ ဒုက္ခများစွာ၊ ဖြစ်လေရာ၏၊ ချမ်းသာရအောင်၊ သားမင်းခေါင်လည်း၊ နောင်တဆယ်မည်၊ ထွတ်အောင်ရည်၍။ ။ ကြံ စည်သတိဆင်ခြင်တည်း။

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၂. ရေစကြိုနံတော်ဖြတ်ထုံးအရ၊ မြန်မာဘုရင်များလက်ထက်၊ တရားမအာဏာများနှင့်ရာဇဝတ်အာဏာများအကြောင်းကိုရေးသား မော်ပြပါ။

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၃. အောက်ပါစာပိုဒ် (က)၊ (ခ)၊ (ဂ)၊ တခုခု၏စကားစပ်နှင့်တကွ အဓိပ္ပာယ်ကိုမော်ပြပါ။—

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(က) အဓိန္ဒိတံ—ဓိန္ဒိတံ၊ ကံအကျိုးစက်၊ ပျက်စိတ်ဖြစ်တတ်၊ ဓါတ်ပစ္စည်းရုပ်၊ ဝိပျိဿ်လုပ်က၊ ထုစွတိ၊ ပထုစွထိတိလောကော၊ ထို သဘောကြောင့်၊ ထိုလောကကွင်၊ ထိုသဘော၏၊ ကြံတွင်ပြီးပြီး မကြံ ဘဲလည်း၊ ရှေ့လက်ထဲရောက်၊ အပြီးမြောက်နေကြ၊ အံ့လောက်ကြရာ၊ ထောမနာသည်၊ ကောလာဟလညီအံ့။ (ခ) ပြောလိုက်ကဲ့နော်၊ အဆွေ တော်ယော်၊ နေဘော်နေဘက်၊ မိတ်မပျက်ရအောင်၊ အထွက်သာနှေး၊ ဝင်မလေးစေနှင့်၊ ဖြေးဖြေးသာသာ၊ ကျွန်းတကာကို၊ လှည့်ကာပတ် ခွေ၊ နေချင်ရာနေလေတော့၊ ငါပေထုံထဲ၊ နေမင်းနဲ့၊ ခဲချည့်မဲသည့်၊ စွဲသည့်မိတ်လက်၊ ဝတ်မပျက်အောင်၊ နေထွက်မှငါထွက်မည်၊ လက် ထွေဦး၊ ကြော့မှူးနှင့်ငါဆောက်တည်အံ့။ (ဂ) အားလုံးစု၍၊ ယုယု ယယ၊ ခစားကြပေထုံ၊ ယက္ခအလား၊ တီလူးများကဲ့သို့၊ မှတ်မှား မိတ်မိ၊ ဝိပ္ပဏ္ဍာသ၊ သဘာဝကြောင့်၊ စက္ခုကနည်း၊ ကွဲတကျည်းထွဲ၍၊ အမူခဲတွေ၊ ကြက်သရေမဂ်လာ၊ ယဉ်ဝါရု၊ လွှကမ်းခပ်သည့်၊ နတ် ရည်တူထိုကို၊ နေပူထုံးအကြံတွင်၊ မီးမလျှံချင်သကဲ့သို့။

4. ရာဇဝင်ကိုသင် အံ့ထေ့ကျက်ခြင်းအား ဖြင့်မည်ကဲ့သို့ကျေးဇူးများကြောင်းကိုမောင်လုလားရာဇဝင်မှသက်သေသားကထုတ်နှုတ်၍ရေးသားဖော်ပြပါ။

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5. အောက်ပါစာပိုဒ်၏ အနက်အဓိပ္ပာယ်ကိုရေးသားဖော်ပြပါ။—

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ဆေမျိုးပေါက်ဘော်၊ မထော်သည်မှန်သော်လည်း၊ ဝန်မတန်သည့်စစ်ကဲ၊ ထမင်းမတန်သည့်ထမင်းနှံကဲ့သို့၊ တောထဲကဘေးလည်း၊ သေဆေးကိုတားပေသည်၊ ကိုယ်ထဲကသွေးလည်း၊ သေဆေးကိုပွားစေသည်၊ အဆွေမထူ၊ ဇာတ်မတူသော်လည်း၊ သူတော်စင်မှန်သောကြောင့်၊ တိရစ္ဆာန်လျက်၊ လူ့အသက်ကို၊ ဆက်ဆက်ကယ်ဆယ်ဘူးကြသည်၊ ဘဝများစွာ၊ လူဖြစ်ပါလျက်၊ အဇာတသတ်၊ ဘမင်းမြတ်ကို၊ သတ်ဖြတ်ညှဉ်းဆဲဘူးလေသည်၊ အထည်တည်အရပ်ရပ်၊ နိပါတ်ဘုရားဖော၊ လောလောမျက်မြင်၊ ရာဇဝင်ဒဏ္ဍာရီ၊ ပုံကိုမိမိ၍၊ လောကီဘဝ၊ လိုရာသို့ကျတည့်အောင်၊ အာစလျှာစ၊ နှုတ်ရွှေနှင့်၊ ဗလဝစောင်ရမ်း၊ စောင်လက်ရပ်စမ်းသကဲ့သို့၊ ဖြန်းကာသန်းကာ၊ အပေါ်လွှာအရည်ပွပ်၊ လောကဝတ်မထုတ်၊ ကျွန်ုပ်မိတ်တွင်၊ အတိတ်ကမ္ဘာ၊ ရှေးအခါက၊ မကွာပေါင်းသူ၊ ကျေးဇူးပစ္စုပ္ပန်၊ ဆက်ဆံကြလေ၊ ယိတ်နှစ်တွေကြောင့်၊ ညွှန်ရေကြာပင်၊ ရှင်သည့်ပမာ၊ စေတနာနှင့်၊ မေတ္တာကြည်ညို၊ ညီအစ်ကိုအလား၊ ယုံစားသတ်ဝင်ပါသည်။

6. မြန်မာစာစီကုံးခြင်းသည်စကားပြောခြင်းနှင့်များစွာခြားနားကြောင်း၊ ၎င်းဖြင့်စာလုံးပေါင်းသတ်ပုံသတ်ညွှန်းများယွင်းတွင်အဓိပ္ပာယ်သော်၎င်း၊ သဘောအယူအဆသော်၎င်း၊ ထွေတတ်ကြောင်းများကိုပြုလုပ်နှင့်တကွ အသေအချာရှင်းလင်းဖော်ပြပါ။

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7. Translate into Burmese:—

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A Delightful View.

I counted more than twenty lakes at different levels, below me ; some brilliant and shining like polished mirrors ; others not less beautiful, dark and solemn with some mighty mountain shadow. As I looked

landward, the mountains reared their huge crests, one above the other, to the farthest any eye could reach. Towards the opposite side, the calm and tranquil sea lay beneath me, bathed in the yellow gold of a rising sun ; a few ships were peaceably lying at anchor in the bay ; and the only thing in motion was a row-boat, the heavy monotonous stroke of whose oars rose in the stillness of the morning air. Not a single habitation of man could I descry, nor any vestige of a human being, except that mass of something upon the rock far down beneath be one, and I think it is, for I see the sheep dog ever returning again and again to the same spot.

8. အောက်ပါအကြောင်းအရာထဲမှတစ်ခုကိုစာစီကုံးရေးသားပါ။ 20

(က) ကြီးပွားချမ်းသာရေး။

(ခ) မြန်မာပြည်ဥပဒေအကောင်း။

(ဂ) ယခုခေတ်သမယ၏တိုးပွားဆုတ်ယုတ်သော
အကြောင်းများ။

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FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate faithfully, but not necessarily too literally, any *four* of the following, but no group should be left untouched:— 5 × 4 = 20

GROUP A

- (a) स्थितः स्थितामुचलितः प्रयातां
निषेदुषीमासुनबन्धपौरः ।
जलाभिलाषी जलमाददानां
च्छायेव तां भूपतिरन्वगच्छत् ॥

- (b) तां देवतापिबतिषिक्रियार्थमन्वग् यथी मध्यमलीकपालः ।
बभौ च सा तेन सतां मतेन शङ्खेव साचाहिषिणीपपन्ना ॥

GROUP B

- (a) वनस्यतीनां सरसां नदीनां तेजस्विनां कान्तिभृतां दिशाश्च ।
निर्याय तस्याः स पुरः पुरस्ताच्छिर्यं दधानां शरदं ददध ॥
- (b) गर्जन् हरिः साभसि शैलकुञ्जे प्रतिध्वनीनात्मजतान् निश्रम्य ।
क्रमं बबन्ध क्रामितुं सकीपः प्रतर्कयन्नन्धगेन्द्रनादान् ॥
- (c) वसुनि तीर्थं घनवद्वाकारीत् सङ्कासनं गोवभिदाभ्यवासीत् ।
न बन्धकादन्धमुपास्थितासौ यथासि सर्व्वेषुधृतां निरास्यत् ॥

GROUP C

- (a) मय्येव मन आधत्स्व मयि बुद्धिं निवेशय ।
निवसिष्यसि मय्येव अत ऊर्ध्वं न संशय ॥
- (b) श्रेयो हि ज्ञानमभ्यासाज्ज्ञानाच्च ज्ञानं विशिष्यते ।
ध्यानात् कर्मफलत्यागस्त्यागाच्छान्तिरनन्तरम् ॥

2. *Either*, Explain how self-purification was effected by the king's devoted services to the sage's cow. Why was this self-purification required at all ? 10

Or, Describe some of the charms in the regions of air, land and water as referred to in श्रियं दधानां शरदं ददर्श ।

Or, Explain briefly the courses of अभ्यास, ज्ञान, ध्यान, and त्याग as touched on in your portion of the text in the भगवद्गीता.

[Your answer may be EITHER in English or in Sanskrit.]

3. (a) Justify the case-endings in any four of the following :— $3 \times 4 = 12$

- (i) ताम्.....अन्वत् ययौ । (ii) सतां मतेन ।
(iii) निर्व्याय पुरः । (iv) निवसिष्यसि मयि ।
(v) ज्ञानात् (विशिष्यते) ध्यानम् त्यागात् शान्तिः (अनन्तरम्) ।

(b) *Either*, How do you defend आत्मनेपद in आददानाम् with reference to the meaning in Question 1 A (a) ? 4

Or, How is it possible to take कान्तिधत्ताम् as qualifying objects in masculine, feminine, and neuter genders in the text quoted (वनस्थतीनाम् &c.) ? 4

(c) *Either*, What meaning is to be given to कृ in कृतान् in आत्मकृतान् प्रतिभ्वनीन् निश्चय ?

Or, What sort of फलवत्कर्ता is implied by the आत्मनेपद in दधानाम (श्रियं दधानां शरदं ददर्श) ?

Or, Bring out clearly the comparative idea in श्रेयः (in श्रेयो हि ज्ञानमभ्यासात्) by reference to the intended meaning of the word.

4. (a) Use the resulting forms in any *five* of the following in short sentences of your own :—

5 × 3 = 15

- (i) राज्ञः पूः ।
- (ii) वनस्य समीपे (using an अव्यय for समीपे) ।
- (iii) अन्वी यामः (using अन्तर for अन्व) ।
- (iv) भवस्य पत्नी (feminine suffix for पत्नी) ।
- (v) पुनः पुनर्नमति (यङ् for पुनः पुनः) ।
- (vi) ज्ञातुमिच्छति (using सन्) ।
- (vii) दयोरतिशयेन वृद्धः (with आतिशयनिक suffix) .
- (viii) रमते अस्मिन् (with क्तव्य) .

(b) Make necessary corrections in any *five* of the following :—

5 × 2 = 10

- (i) अस्तं याति सूर्यः पश्चिमस्यां दिशि ।
- (ii) नीतिविदामुग्रनाः श्रेष्ठः ।
- (iii) विंशतयोऽत्र बालाः (meaning only twenty) ।
- (iv) कर्णौ ददन् शृणु ।
- (v) दक्षिणे भारतान्मलयः ।
- (vi) सर्वेषु बालकेषु रामो बलीयान् ।
- (vii) की नाम लप्येत् कथायाम् ?
- (viii) परोक्षे कार्यहन्तारं मित्रं वर्जयेत् ।
- (ix) विभ्यन्ती सा समुपस्थिता ।
- (x) केन पथा सञ्चरसि ?

5. Translate into Sanskrit any *five* of the following :— 5 × 5 = 25

- (a) Do not ask for the impossible ; you will then come to grief.
- (b) It is easy to blame others ; examine your own shortcomings.
- (c) Good government is our first necessity ; don't forget this.
- (d) Honesty is the greatest virtue ; it leads to success.
- (e) Seek for the truth ; speak the truth.
- (f) Think what is right ; act courageously.
- (g) Man is to be worshipped ; God is in man.
- (h) One is everywhere ; serve One and serve all.

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1 Translate into English any three of the following :—3 × 5
= 15

(a) स मुहूर्ते ध्यात्वा वाचस्पत्यं नयन उद्विग्नदयो वेपथुः प्राल्लसितव्रीत्, किमहमेनं न प्रत्यभिज्ञास्यामि ? इह ज्ञानेन सहस्रकृत्वश्रितेषु यथा चाहिताः ।

(b) इत्थं धृतभगवत एणेशाजिनवाससानुसवनाभिषेकार्द्रं कपिशकुटिलजटाकलापेन च विगोचमानः सूर्यर्चा भगवन्तं हिरण्यं पुरुषमुज्जिहाने सूर्यमखिलेऽभ्युपतिष्ठन्नात् ।

(c) सर्वथा न चिरेण मान्वातारमिव धौरेयं सर्वराजर्षीणां भुवनानन्दहेतुमात्मजं जनयिष्यति देवी, शात्कालकमलिनीवाभिनवकमलीद्वयेन गन्धगजमाङ्गुदयिष्यति देवम् ।

(d) अथ कपोतो राजानमब्रवीत्. प्राणरक्षार्थं श्वेनाह्वीतो भवन्तं प्राणार्थी प्रपद्ये । अङ्गेरुजानि प्राप्यार्थी मुनिर्भूत्वा प्राणार्क्ष्वां प्रपद्ये ।

(e) यावता च नयेन विना न याति लीकयात्रा स लीकतः एव सिद्धः, नात्र शास्त्रेणार्थः । सनन्धयोपिहि तैस्तेरूपायैः सनपानं जनन्या लिप्सते ।

Give the लुङ् third person singular of the roots in अब्रवीत् and प्रपद्ये । 2

Either, Write grammatical notes on एनं in (a) and सूर्यर्चा in (b). 3

Or, Derive the underlined words in the above extracts

2. Either, Give the merits of hunting as given by विश्वामित्र in विश्वतचरितम् । 6

Or, Give the substance of the following either in English or in Sanskrit :—

संप्रचरन्, नानायागेषु क्रियाफलं धर्माख्यं परी ब्रह्मणि यज्ञपुरुषे भगवति वासुदेवे एव आवयमान आत्मनेपश्यदितकवायो इविःखध्वर्युभिर्गृह्यमाणेषु स यजमानो यज्ञभाजी देवास्तान् पुरुषावयवेऽवध्यायत् ।

3. Amplify in English the idea contained in any *two* of the following :— 4

- (a) न हि शक्यं देवमन्वथाकर्तुमभियुक्तेनापि ।
- (b) अवित्रयफलाच्च प्रायी निश्चावसानसमयदृष्टा भवन्ति स्वप्नाः ।
- (c) जयेत् कदर्थं दानेन सत्येनाश्रितवादिनम् ।
- (d) अवित्रासता हि जन्मभूमिरलक्ष्म्याः ।

4. (a) Construct sentences to illustrate any *three* of the following :— 6

- (i) The sixth case-ending used in the nominative case in connexion with क्त used in the present tense.
- (ii) The root तप् taking आत्मनेपद (in the active voice).
- (iii) The base राजन् used as the last member of a तत्पुरुष compound.
- (iv) The base सखि used as the last member of a बहुव्रीहि compound.

(v) A समाहारद्विगु ।

(vi) An अलुक्कमास ।

(b) Make corrections in any *three* of the following :— 6

- (i) अस्ति बारणस्यां प्रथितयशः सुविदितनाम कश्चित् नृपतिः ।
- (ii) स अधुना गृहं परित्यज्य लघ्यानि अधिवसति ।
- (iii) शैशवं परतः स प्रत्यहं पितरौ सिषेव ।
- (iv) पापेन ऋते कथं राजपुरुषं विभेधि ।
- (v) श्रद्धायामधिश्चयानः स मनसा हारकायै गच्छति ।
- (vi) जलस्य पिपासुः स नदीकूलैः वतिष्ठति ।

(c) Give the formation of any *three* of the following :— 3

- (i) वस् + क्त ।
- (ii) लभ् + क्ताच् ।
- (iii) लक्ष्मी + मतप् ।
- (iv) बहु + इष्टन् ।
- (v) भी + श्रद्ध ।
- (vi) Feminine form of रुद्र ।

5 Translate into English any *three* of the following :— $3 \times 10 = 30$

(a) ततो मयीकम्—स एवास्मत्प्रभू राजहंसी महाप्रतापी तिस्रमर्थः । वैलीकस्यापि प्रभुत्वं तत्र युज्यते किं पुनाराज्यमिति । तदाहं तैः पक्षिभिः “दुष्ट, कथमस्मद्भूमौ चरसि”

इत्यभिधाय राक्षसिवर्षस्य समीपं गतः । ततः राक्षः पुरः मां प्रदर्श्य तैः प्रणम्योक्तम् । देव,
एष दुष्टो बली यदस्मद्देशे चरन्नपि देवपादानधिचिपति ।

(b) पुरा दैत्यौ मृदाहारी सुन्दोपसुन्दनामानौ महता क्लेशेन वैलोक्यकामगया चिराचन्द्र-
शेखरभाराधितवन्तौ । ततस्तयोर्भगवान् परितुष्टः “वरं वरयतम्” इत्युवाच । अनन्तरं तयोः
समधिष्ठितया सरस्वत्या तावत्पुत्रद्वयं ज्ञातौ अभिहितवन्तौ । यदावयोर्भगवान् परितुष्टस्तदा
स्वप्रियां पार्वतीं ददातु ।

(c) तेन अभिहितम् । सुन्दरि मा भेषीः । कथय कुतस्ते भयमिति । तथा अभिहितम् ।
यद्वदन्तौ मम स्वामिनो विमुच्य चरितौ तेनैषा जातमूर्च्छां स्थिते । तस्माद्देवौ तावत् समीपे
स्थीयताम् भवद्भामितस्याः येन युष्मद्भिन्धानेन मनाक् स्वस्थीभूतायां स्वामिन्याम् अहं निराकुला सती
भवतीः समस्तं विज्ञापयामि ।

(d) अवान्तरं गतोऽसौ दिनकरः, समुल्लसितं तिमिरं, विष्णुगिततारकानिकरः,
वियुक्ताश्चक्रवाकाः, सुकुलितं कमलवनं, निलीनाः शकुनयः, समुद्रतः शशधरा, विलसिता चन्द्रिका ।
ततश्चित्रप्रसीदकारिणीभिः कथाभिर्विनोदयन्तीभिस्तं वत्सां मदनमञ्जरौम् अतिवाहिताभ्यामिः
कथंचिद् रजनौ ।

(e) ततस्तदाकर्ण्य तातो बन्धाहत इव गृहीतो महादुःखिनः, ततस्ततेनाभिहितम् भद्र
वेदक ! परित्यज्य चन्दनरससंकरीतलं तालवृक्षं, न मानिषं बहिस्तापी बाधते, गच्छ समागम्य
कुमारं येनापनयामि तस्य पापनिवसंसर्गवारणेन सुदुःसङ्गमात्मनोऽन्त्यापमिति ।

6. Translate into Sanskrit any five of the following:— $5 \times 5 = 25$

(a) In old times there was a mighty Dānava named Namuchi, who was devoted to charity, and did not refuse anything to anybody that asked, even if he were his enemy.

(b) You must come back quickly as soon as my daughter has reached her husband's palace, in order that I may have early news of her arrival ; so you must certainly go there quickly this very moment.

(c) When they arrived the king Vatsa and others searched for him, and finding that he had not returned, they all went to the house of Ratnaprabha ; he was grieved at that news.

(d) In the meantime a king named Harivara, wearied out with hunting, came that way in search of water ; he was attracted by the sound of that singing, and leaving his chariot he went there alone.

(e) on the fourteenth day I came here and worshipped Gauri for a long time, and, as fate would have it, so ardent was my devotion that the day came to an end before my worship was finished.

(f) So Nala, having been deprived of his sovereignty by his brother, started to another land with Damayanti ; and as he was journeying along, he reached the centre of a forest, exhausted with hunger.

(g) Having seen this with my own eyes, I have now arrived here in the course of my wanderings ; so be assured, queen, you shall be eventually re-united to your beloved ; for the righteous do not sink.

PĀLI

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FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English any *two* of the following extracts :— 12
 - (a) Saddhim Aṭṭhakathāyādā potthake Piṭakattaye,
Ganthākare vasanto so vihāre dūrasamkare.
Parivattesi sabbā pi Sīhalaṭṭhakathā tadā
sabbesaṃ mūlabhāsāya Māgadhāya niruttiyā.
Sattānaṃ sabbabhāsānaṃ sā ahosi hitāvahā,
theriyūcariyū sabbe Pāliṃ viya tam aggahesuṃ.
 - (b) Nāvāya bhūmiṃ otippā Vijayappamukhā tadā
kilantā paṇinā bhūmiṃ ālambiya nisīdisuṃ,
Tambabhūmirajopuṭṭhū tambapaṇṇi yato ahū
so deso c' eva dipo ca Tambapaṇṇi tato ahū
Sīhabūhu narindo so sīham *ādipūṇavā* iti
Sīhalo, tena sambandhā ete sabbe pi Sīhalā.
 - (c) Diṭṭho hi me so Bhagavā, antimo 'yaṃ samussayo,
vikkiṇṇo jātisaṃsāro, n' atthi dāni punabbhavo.
Āradhaviṛiye *pahitatte* niccaṃ dāḥaparakkame
samagge sāvake passa, esū Buddhāva vandanā.
Bahunaṃ vata atthāya Māyā janayi Gotamaṃ,
vyādhimaraṇatunnānaṃ dukkhakkhandhaṃ vyapanudi.
2. *Either*, Explain the following with reference to the context :— 12
 - (a) Māgadhāya nirutti and Pāli.
 - (b) Aṭṭhakathā and Piṭakattaya.
 - (c) Lāḍavisaya and Sīhala.
 - (d) Nāra and Upadhī.

Or, Write biographical notes on—(a) Mahākassapa, (b) Upāli, (c) Metteya, (d) Vijaya. 12
3. *Either*, Give the substance of the conversation of the Buddha with Māra as given in the *Padhūna Sutta*. 8

Or, Explain fully :— 8

Sabbe dhammā anattā 'ti yadā paṇḍitāya passati
atha nibbindati dukkhe, esa maggo visuddhiyā.
4. *Either*, (a) Who was Gautama Buddha ? 3

(b) Why did he retire from the world ? 3

(c) Who propagated the Buddha's teachings in Ceylon, and when ? 4

Or, Summarize the teaching of the Buddha as given in the first five poetry pieces of your text. 10
5. Write grammatical and explanatory notes on *three* of the italicized words in Question 1. 5

6. (a) Expound the *saṃāsas* in any three of the following :—*jātakabbhuta-vedallaṇi*, *dhammavinayaśaṅgaha*, *duddhakhītra*, *pañisukūladharani*, *parappa-vādakusalo*. 5

(b) Give the roots of—*abbahe*, *upaccagā*, *visositā*, and *antarādhāyatha*. 4

7. (a) Conjugate the following roots in *vattamānā*, *parokkhā*, and *ajjatanī* in the 3rd person, singular and plural :—*kara*, *su*, *dir*, and *bhū*. 6

(b) Decline the following :—*phala*, *kañña*, *eka*, *mātā*. 6

8. (a) State the rules for the use of either the third (*tatiyā*) or the seventh (*sattamī*) case-ending. 4

(b) Frame sentences in Pāli to illustrate the use of four of the following *nipātas* :—*nuna*, *vala*, *sace*, *have*, *pāto*, *alañi*. 4

(c) Name the suffixes for the formation of perfect participles and future participles. 2

9. Translate into Pāli any two of the following passages :— 25

(a) Once on a time in the kingdom of Kosala at Sāvattthi there was a pond where the tank of Jetavana now is. Therein dwelt the Bodhisatta, who had come to life as a fish in those days. And, then as now, there was no rain in the land, and water in tank and pool was dried up.

(b) The Bodhisatta was a teacher of world-wide fame in Takkhasila. He had 500 young brahmins as pupils. One day these pupils set out for the forest to gather firewood for their master, and busied themselves in gathering sticks.

(c) A girl was swept down by the stream. She began to cry. Hearing her cries, Bodhisatta thought, "I must rescue her from the water." "Don't be afraid, don't be afraid", he shouted. He brought her safe to land, and gave her food.

(d) Bodhisatta went to Benares with his father to a public festival. There he earned a great deal of money by conch-blowing, and started for home. They had to pass through a forest infested by robbers. Finding only two persons, the robbers beat and robbed them.

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate any two of the following passages into English :— 25

(a) So *kāśiraṭṭhaṃ atikkamma kosalarājānaṃ upaṭṭhahanto anukkamena rañño abbhantaro vissāsiko jāto*. So *ekadivasaṃ kosalarājānaṃ āha* : "deva, *Bārāṇasirajjaṃ nimmakkhikamadhupaṭaḥasadisaraṃ, rājā atimuduko, appen' eva balavāhanena sakkā Bārāṇasirajjaṃ gaṇhituṃ*" 'ti.

(b) *Tatra kho Bhagavā pañcavaggiye bhikkhū āmantosi* : "dve 'me bhikkhave antā pabbajitena na sevitaḥḥ. Katame dve ? Yo cāyaṃ kāmesu kāmasukhallikānuyogo hīno gammo pothujjaniko anariyo anatthasaṃhito, yo cāyaṃ attakilamathānuyogo dukkho anariyo anatthasaṃhito, ete kho bhikkhave ubbo ante anupagamma majjhimā paṭipadā Tathāgatenā abhisambuddhā cakkhukaraṇī mānakaraṇī upasamāya abhiññāya sambodhāya nibbānāya saṃvattati."

(c) "Yathā mahārāja khīraṃ duyhamānaṃ kālantarena dadhi parivatteyya, dadhito navaṇitaṃ, navaṇitato ghaṭaṃ parivatteyya, yo nu kho mahārāja evaṃ vadeyya : "yaṃ yeva khīraṃ taṃ yeva dadhi, taṃ yeva

navanitam, tam yeva ghatan 'ti, sammā nu kho so mahārāja vadamāno vadēyyā" 'ti. "Na hi bhante, tam yeva nissāya sambhūtan" 'ti. Evañ ova kho mahārāja dhammasantati sandahatī, añño upajjati, añño nirujjhati, apubbam acarimam viya sandahati, tena na ca so na ca añño pacchimaviññā-ṇasamgaham gacchati 'ti'.

2. Render into English :—

30

Either, (a) Ath ekadivasam rañño culāmaṇi nattho. Rājā tassa natthabhāvaṃ sutvā amacco āpūposi : "sabbe antopāsāḍake manusse gahetvā culāmaṇiṃ āharupethā" 'ti. Amaccā mātugāme ādiṃ katvā culāmaṇiṃ paripucchantā adisvā mahājanaṃ kilamenti. Tam divasaṃ Anandatthero rājanivesanaṃ pavitttho. Yathā tā itthiyo pubbe theram disvā va natthattutthā dhammaṃ suṇanti ca uggaṇhanti ca tathā akatvā sabbā domanassappattā va ahesuṃ. Tato therena "kasmā tumhe ajja evarupā jūtā" 'ti pucchitā evam āhāṃsu : "bhante, 'rañño culāmaṇiṃ pariyesamā' 'ti amaccā mātugāme upādāya antopāsāḍake manusse kilamenti, na jñāma kassa kiṃ bhavissa, ton' amha domanassappattā" 'ti. Thero "mā cintethā" 'ti tā samassasētvā rañño santikaṃ gantvā paññatte āsane nisiditvā "maṃ kirate mahārāja nattho" 'ti pucchi.

Or, (b)

Dhaññaṃ dhanam rajatam jātariṇam
pariggaham vā pi yad atthi kiñci
dāsa kammakarā pessa ye c' assa anujjvino
sabbam nādāya gantabbam, sabbam nikkhippa gāminam (1)

Yañ ca karoti kāyena vācāya uda cetasā,
tam hi tassa sakaṃ hoti, taṃ ca ādāya gacchati,
taṃ c' assa anugam hoti chāyeva anapāyini. (2)

Tasmā kareyya kalyāṇam nicayam samparāyikan
puññaṃ paralokasam patitthā honti pāṇinan 'ti. (3)

3. *Either, Write a short story of Indian shipping in the light of the information supplied by the following expressions :—(a) nāvam, mahānāvam ulumpam ; (b) dhuro, kṛpakū (tayo), laṅkāro, yottam. padarāni, phalakāni ; (c) vaṇijā, nāvikā, nāvikanam kammakarā, niyyāmakā ; (d) nārūpa velanam ; (e) disākāro, niyyāmakasuttam, niyyāmakasippam ; (f) akālavātām ; (g) bhinnānāvam ; (h) samuddam, mahāsamuddam, āmī, loṇajalam ; (i) macchā, makarā, macchā manussasamānasarirā ; (k) pattano, pattanagāmo, Bhārukaccham, Suppharakam ; (l) Tambapaṇḍīpam, Suvayyabhūmi, Bāverurattam ; (m) agghāpanako ; (n) kalāpaṇāmi.* 13

Or, Enumerate the various duties of a *saddhivihārika* as specified in your text. 13

4. Write short explanatory notes on any three of the following bringing out the technical meaning of each :—*Jātaka, pubbanimittāni, ariyasaccāni, paṭiccasamuppāda, sammādiṭṭhi.* 12

5. (a) Disjoin any five of the following *sandhis* :— 5

(i) appenera, (ii) cāyāni, (iii) sammadeva, (iv) suhujū, (v) yatharva, (vi) etadattho, and (vii) saññogo. 5

(b) Decline *bhikkhu* in the dative, *naḍḍi* in the locative, *kattu* in the instrumental, *piṭṭhā* in the genitive, and *sattā* in the ablative. (Give both singular and plural forms. 5

(c) Conjugate *yā* in the optative (sing.), as (to eat) in the present (sing.), *brū* in the aorist (plu.), *dā* in the imperative (sing.), and *su* in the future (plu.). 5

6. Expound the *samāsas* in any two of the following :— 5

(a) *nimmakkhikamadhupaṭalasadisaṃ* in Q. 1 (a), (b) *attakīlamāthānuyogo* in Q. 1 (b), (c) *anupagamma* in Q. 1 (b), and (d) *kālantarena* in Q. 1 (c).

ARABIC

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FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English any two of the following :—

25

A

و لقد ارحمنا الى موسى ان اسر بعبدى فاضرب لهم طريقاً
 في البحر ريساً لا تخاف دركا ولا تخشى - فاتبعهم فرعون بجنوده
 فعشيهم من اليم ما غشيهم - واضل فرعون قومه وما هدى -
 يا بني اسرائيل قد انجيناكم من عدوكم واعدناكم جانب الطور
 الايمن و نزلنا عليكم المن والسلوى - كلوا من طيبات ما رزقناكم ولا تطغوا فيه
 فيحلل عليكم غضبي ومن يحلل عليه غضبي فقد هوى - واني نغفار لمن
 تاب وعمل صالحاً ثم اهتدى - وما ابعالك عن قومك يا موسى - قال هم
 اولاء على اثري - وعجلت اليك رب نرضى - قال فانا قد فتناك قومك
 من بعدك و اضلهم السامري - فرجع موسى الى قومه غضبان اسفا - قال يا
 قوم الم يعدكم ربكم وعدا حسناً - - افضال عليكم العهد ام اردتم ان يحلل عليكم
 غضب من ربكم فاخلفتم موعدى *

B

عن علي بن ابي طالب قال للمومن علي اخيه المومن ثلاثين حقاً لا براءة
 له منها الا بالاداء او العفو: يغفر لته ويرحم عبرته ويستتر عورته ويقبل عشرته

و يقبل معذرتہ و یرد غیبتہ و یدیم نصیحتہ و یحفظ خلتہ و یرعی ذمتہ و یعرد مرضتہ و یشہد مہنتہ و لہیب دعتہ و یقبل ہدیتہ و یجازی صلتہ و یشکر نعمتہ و یحسن نصرتہ و یحفظ حرمتہ و یقضي حاجتہ و یقبل شفاعتہ و لا یخیب مقصدہ و یشمت عطستہ و یرشدہ ضالتہ و یرد سلامہ و یطیب کلامہ و یرد انعامہ و یصدق اقامہ و ینظر ظالمًا بردہ عن ظالمہ و مظلومًا باعانتہ علی وفاء حقہ و یرالہ و لا یعادہ و لا یخذلہ و لا یشتہ و یحب لہ بالخير ما یحب لنفسہ و یرک لہ من الشر ما یرک لنفسہ *

C

و اعلم ان الملك لرعيته كالتبيب للمريض ان كان مزاجه لطيفاً لطف له التدبير و دس له الادوية المكرهة في الاشياء الطيبة و تحيل له بكل ممكن حتى يبلغ غرضه من برته و ان كان مزاجه غليظاً عالجه بمّر العلاج و مريضه و شديده - و لذلك لا ينبغي الملك ان يتهدد من يكفي في تاديبه الاعراض و الغضب - و كذلك لا ينبغي ان بحبس من يكفي في تاديبه التهديد كما انه لا ينبغي ان يضرب من يكفي في تاديبه الجس و لا ان يقتل بالسيف من يكفي في تاديبه ضرب العصا - و تتميز هذه الحلات بعضها من بعض اعني معرفة المزاج الذي يكفي فيه التهديد و لا يحتاج الى الجس او يكفي فيه الجس و لا يحتاج الى الضرب يحتاج الى لطف حدس و صحة تمييز و صف خاطر و يقظة تامة و فطنة كاملة *

2. (a) Re-write any one of the passages in Question 1 with all the vowel-points. 6

(b) Write grammatical notes on the words underlined in extract B. 5

3. Answer any three of the following :—

12

(a) use عَرِنَ and بَيَّنَ as امر حاضر معروف from باب افعال,

تفاعل, and استفعال

(b) Give the use of the *cardinal numbers* in Arabic from 1—10, and illustrate them with examples.

(c) Give the *نواصب مضارع* and illustrate their uses with examples.

(d) What do you understand by *استثناء متصل* and *استثناء منقطع* ? Give their grammatical peculiarities and illustrate them with examples.

4. (a) Write in your own Arabic the story of

6. الطبيب و الخليفة

(b) Write short notes on any *two* of the following :—

6

(1) عدل اسماعيل الساماني (2) خلق آدم (3) المارودي

5. Correct or justify the following, giving reasons :—

9

(a) جاء زيداً وعمراً (b) الشمس طلعت

(c) طلعت الشمس (d) يا عبد الله

(e) اذن اني اكرمك (f) الرجال قال

(g) قلته (h) اعلم انه حقاً

6. Differentiate between the significance of the following :—

6

(a) قبل and قبل (b) استشار and اشار

(c) عاد and عاد (d) ضرب and ضرب

(e) ابكى and ابكى (f) انصب and صب

7. Translate into Arabic :—

25

Every statement is of one of two kinds. It is either true or false. It has also three tenses. It is either past or present or future. Certain statements may be sometimes true and sometimes false. If you say that such and such a man came or went, this may be true and may also be false. But if you say that the sun rose yesterday, it will be true at all times.

SECOND PAPER.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1 Translate into English either A or B :—

12

A

كن راحمى فـلقد ايسـت * من الافارب و الاباعد
و على العدى كن ناصرى * لا تشمتن بى الحواسد
يا ذا الجلال و عافنى * مما من البلوى اكابد
و عن السورى كن ساترا * عيى بفضل منك وارد
يا رب قد ضاقت بى * الاحوال و اغتال المعاند
فامنن بنصرك عاجلا * فضلا على كيد الحواسد

B

اخلاء السرخاء هم كشير * و لكن فى البلاء هم قليل
فلا يغرك خلة من تواخى * فما لك عند نائبة خليل
و كل اخ يقول اذ ونى * و لكن ليس يفعل ما يقول
سوى خل له حسب و دين * فذاك لما يقول هو الفعول
تشبت بالامور و لا تبادر * لشيء دون ما نظر و فكر
قبيم ان تبادر ثم تخطى * و ترجع لستثبت دون عذر

2. Answer any three of the following :—

15

(a) Give the صيغة and باب of any five of the following ---

ضاقت - اغتال - فامنن - اكابد - تواخى - تشبت - تخطى

(b) Write notes on five of the following, explaining their construction :—

كن راحمى - تشمتن - يا ذا الجلال - عافنى - كن ساترا عيى - ليس
يفعل - الفعول

(c) Select any *five* of the following and state whether they are in the singular or plural, and give with vowel-points their opposite number :—

الاباعد - الحراسد - المعاند - البلوى - اخلاء - شىء - نائبة

(d) Write out with full vowel-points the *last two bayts* in Question 1, B.

3. Write notes on the following :—

3

المعنصد - حسان بن ثابت - معاوية بن ابي سفيان

4. Translate into English *either* A *or* B :—

30

A

و فى هذه السنت توفى المهدي وهو فى طلب الصيد و ذلك انه
ساق خلف صيد فدخل خربة فتبعه المهدي فوقع به صدمة فى باب الخبرة
لشدّة سوقه فتلف لساعته و كانت خلافته تنيف على عشرين سنة و كان ممدوحاً
محبباً الى الناس وصولاً لقاربه طوبلا أبيض مليحاً جواداً - يقال ان المنصور
خاف فى الخزائن الف الف و ستين الف درهم ففرقها المهدي كلها
و لم يَلِ الخلافة أحد أكرم منه و لا ابخل من أبيه و يقال انه اعطى شاعراً مرسوة
خمس مئ الف دينار *

B

فأبت ذلك جهم اباء شديداً و استكبروا فى أنفسهم و قالوا لا والله ما
نحب ان يزلوا فيضيّقوا علينا مرابعنا و موارِدنا فأرحلوا عنا حيث أحببتهم
فلا حاجة لنا بجواركم - فأرسل اليهم انه لا بد من المقام بهذا البلد حولا حتى
ترجع إلى رسولى الذى أرسلت فان أنزلتمونى طوعاً نزلت و حمدتكم و إن

أَبَيْتُمْ أَقَمْتُ عَلَى كُرْهُكُمْ وَإِنْ قَاتَلْتُمُونِي قَاتِلْتُمْ كِسْفًا ثُمَّ إِنْ ظَهَرْتُ عَلَيْكُمْ سَبِيْتُ
النِّسَاءَ وَقَتَلْتُ الرِّجَالَ وَإِنْ أَتَرَكْتُ مِنْكُمْ أَحَدًا يَنْزِلُ الْحَرَمَ أَبَدًا فَأَبَتْ جَرَهُمْ إِنْ
تَمَنَّزَ طَوْعًا وَتَعَبْتُ لِقَاتِلِهِ فَاقْتَتَلُوا ثَلَاثَةَ أَيَّامٍ *

5. Answer any *three* of the following :—

15

(a) Explain the uses of *اسم التفضيل*. Translate into Arabic :—

Zainab is the best of women ; she is the eldest sister.

(b) Explain and illustrate with examples the difference in meaning between any *five* *bābs* or conjugations of Arabic verbs.

(c) Write down the *افعال المدح و الذم* and give examples of their use.

(d) Mention the *حروف الاستثناء* and give some examples of their construction.

(e) Write in Arabic, with full vowel-points :—7 women ; 12 boys ; 25 trees ; Tuesday ; the year 1298 of the Hijrah.

6. Translate into Arabic :—

25

(a) Once upon a time there reigned in Ceylon a just and wise king. He had three sons, who excelled in knowledge as well as in bodily strength. One day the father, in order to discover whether his sons had any designs against him, called the eldest aside and said : I am become old. You are heir to the throne. Direct the affairs of state with justice so that your subjects may be loyal and God be pleased.

(b) Amīr Khusrau wrote : This year two stars have disappeared from my firmament ; my mother and brother have both departed. O mother, in days gone by I was as insolent as you were loving, and now that I am ashamed of my conduct, how can I ask your forgiveness ? While a man is blessed with prosperity, he does not recognize its value, but when it is departed, rubbing hands in anxiety does not bring it back.

PERSIAN

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FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English :—

20

روزيكه زبرخاك تن ما نهان شود
 و آنها كه كرده ايم يكايك عيان شود
 يا رب بفضل خویش به بخشای بنده را
 آندم كه عازم سفر آن جهان شود
 بيچاره آدمي كه اگر خود هزار سال
 مهلت پيابد از اجل و كامران شود
 هم عاقبت چو نوبت رفتن بدو رسد
 با صد هزار حسرت از بين جا روان شود
 فرياد از آن زمان كه تن نازنيں ما
 در بستر هوان فتد و ناتوان شود
 اصحاب را چو واقعه ما خبر كنند
 هر دم كسي بسم عيادت روان شود
 الهي غنچه اميد بكشای
 گلي از روضه جاويد بنماي

بخندان از لب آن غنچه بانم
 درین گل عطر پرور کن دهان
 درین محبت سرائی بی مواسا
 به نعمتهای خویشم کن شاد
 ضمیرم را سپاس انییشه گردان
 زبانم را ستایش پیشه گردان
 ز تقویم خود به روزیم بخش
 بر اقلیم سخن فیروزیم بخش
 چو دل دادی ز گوهر گنج برگنج
 ز گنج دل زبانم کن گهرسنج

2. (a) Comment on the construction of the following words :—

6

کامران - مواسا - مزدور - دستور - گنجور

(b) Explain the allusions in the following lines :—

8

(۱)

در آرزوی آب حیانی تو هر زمان
 مانند خضر گرد جهان در دویده گیر

(۲)

هاروت را که خلق جهان سحرارو برند
 در چه فگند غمزه خوبان به ساحری

(۳)

کانچا بدست راقعه بینی خلیل رار
 در هم شکسته صورت بتاهای اندری

3. Explain any two of the following in Persian :—

10

(a)

در نعت او زبان فصاحت کجا رسد
 خود پیش آفتاب چه رونق دهد سپا

(b)

بود ز رخ شمع نبرت فرور
آب نه دیده گل آدم هنوز

(c)

بدان طمع که دهن خوش کنی ز غایت حرص
نشته مترصد که قے کند زنبور

4. Relate in your own words *either* of the following stories :— 8

(a) حکایت مسافر کنعانی که آئینه پیش یوسف نهاد *

(b) حکایت مرده دلے که با مردگان انس گرفته بود *

5. (a) Explain the force of چه in the following :— 6

چه بر تخت مردن چه بر روی خاک - مبار! چه ازین قصه که کار آمد و
خر رفت - آنچه استاد ازل گفت همان می گویم *

(b) Give the rules for the formation of the مصدر حاصل in Persian and illustrate them with examples. 6

6. (a) Write etymological notes on the following :— 6

نازنین - جاریدان - ستایش - سپاس - آفتاب - ناتوان

(b) Form the مضارع from the following :—

کشتن - ساختن - شستن - خفتن - رفتن

7. Translate into Persian :— 25

The Muslims, from the earliest times, have been interested in travels and explorations. This spirit of adventure among the Muslims extended the bound of our geographical knowledge, and paved the way for the colonization of the various parts of the world. They entered many islands as traders, built roads and founded various new cities. The modern world has inherited these benefactions of the Muslims, and has every cause to be thankful to them for the improvements they introduced.

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English any two of the following : --

20

A

آورده اند که ملکی پسر خود را بحرب خصمی فرستاده بود - خبر آوردند که ملک زاده گاه گاه در راه زره از بر بیرون میکند - ر دو شب در یک منزل خیمه اقامت میزند - پدر بدو نوشت - که ای پسر - حق تعالی که عزت را آفرید - کلفت و مشقت را بآن قربن ساخت - و مذلت را که خلق کرد - آرام و راحت را با او رفیق گردانید - آنگه عزت را بملوک داد - ر مذلت را برعایا - حظ پادشاه عز مملکت است - و حظ رعیت امن و امان و استراحت - و این هر دو بخشش بجا جمع نشوند - لا جرم پادشاه باید که آسایش را وداع کند و راحت با رعیت گذارد و اگر چنین نمیکند با استراحت در می باید ساخت - و از عز ملک اعراض می باید نمود *

* شعر *

لذت شاهی ترا بس راحت دیگر مجوری

با وجود سلطنت سرمایه دیگر مخواه

B

فردوسی گوید - شیطان اول ضحاک را اغوا کرد تا پدر صالح خود مرداس را کشت - بعد او را بخوردن گوشت که دران زمان از کبائر معاصی محسوب میشد ترغیب نمود - و بپاداش این خدمت در خواست کرد تا کنقین ضحاک را بوسه دهد - و هنوز ندوسیده بود که دو مار از دو طرف سر بسر آوردند - چون

رحشت برضعاك دست یافت - شیطان بصورت طبیبی خود را بدو نموده -
 گفت - اگر مازانرا از مغز سر آدمی غذا دهند خطری نخواهد بود - تجربه کردند
 مفید افتاد - پس هر روز دو نفر از رعایا را بقتل رسانیده از مغز ایشان غذایی
 مازان مهیا کردند ی - تا کاره - که آهنگری بود در اصفهان و دو فرزند او درین
 قضیه دو شرف هلاکت بودند - مملکت را از بیداد او رهایی داده فریدون را
 پیادشاهی بر داشت *

C

یزدجرد در گرگان بود که روزی در قصر او اسپ غریب دیدند و تا آن
 وقت نظیر آن ندیده بری خبر دادند - گفت - آنرا زین و دهنه کنید و بیارید -
 هیچ کس از عهدۀ این کار بر نیامد - حال را باو عرضه داشتند - خود بیرون
 آمد - و اسپ را دهنه کرد - و زین بر پشت آن نهاد و دمش را بلند نمود که
 بند زینرا بگرداند - اسپ جفته بر سینه یزدجرد زد که هلاک شد - بعدها آن
 حیوان رفت - و هیچ کس نداند که چه شد - و اکثر گفته اند که آن ملکی
 بود که خداوند تعالی مأمور استخلاص خلق نمود - مدت سلطنت یزدجرد
 اتلیم بیست و دو سال و پنج ماه و شانزده روز نوشته اند *

2. Write notes on any three of the following :-

9

ایرج - فریدون - درفش کاربانی - شاپور ذو الا کتاف - مازضعاك -
 شاه طهماسب

3. Either, Re-write in your own Persian the story of Subuktagin and the deer. 6

Or, Give an account of the life of the author of the *Anwār-i-Suhaili*.

4. Answer any two of the following :—

10

(a) State the rules for the formation of اسم فاعل ترکیبی.

(b) Give the opposite numbers of—

حاجت - ضعیف - اوصاف - رعایا - ملوک - دفینه - حکیم - طبیب -
مکانیب - فروش

(c) Enumerate the different kinds of اضافت with examples.

5. Translate into English :—

30

A

در زمان پیشین پادشاهی بود عادل و رعیت پرور - وزیری داشت دانا و نمک شناس - بر رعایای فقیر پول قرض میداد بدن نفع و وعده ادای این باین شرط می نمود که چون پادشاه ازین جهان درگذرد آن وقت هر کس قرض خود را ادا کند - یکس از حاسدان او بر پادشاه از این راز خبر کرد و گفت این وزیر بدخواه تست زیرا که وعده گرفتن قرض خود را بمرگ تو قرار داده منتظر هلاک تو میباشد - پادشاه ازین خبر در غضب شد و وزیر را طلبیده پرسید که چرا گرفتن قرض خود را بمرگ من مشروط میکنی - وزیر گفت - بقای عمر و دولت پادشاه را درین معامله طالبم زیرا که تمام رعیت در دعای بقای تو شب و روز مشغول اند و درازی عمر پادشاه را با دل و جان میخواهند *

B

شنیدم که دارای فرخ تبار * ز لشکر جدا ماند روز سنگر
دوران آمدش کله بانی به پیش * شهنشه بر آورد تعلق ز کیش
بر آورد چوپان بد دل خروش * که دشمن نیم در هلاکم مکوش
من آنم که اسبان شه پرورم * بخدمت بدین مرغزار اندرم
مالک را دل رفته آمد بجای * بخندید و گفت ای نکوهیده رای
ترا یآوری کرد فرخ سرش * و گرنه زه آورده بودم بگوش

6. Translate into Persian :—

25

Sher Shāh was a great king. He was never idle, but remained busy throughout his life, as an ordinary man. He made those under him work as hard as he did. He governed the country far better than any other Afghān king. He knew very well that it was the duty of the king to take care of his subjects. He never distinguished between a Muslim and a non-Muslim. He treated all alike. Todar Mal was one of his most trusted officers, who had the charge of the state revenue. Sher Shāh reigned for about four years. He was succeeded by his son who was not so able as his father.

GERMAN

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FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English the following:—

2 × 10 = 20

- (a) Ich bin's gewohnt, den Kopf recht hoch zu tragen,
 Mein Sinn ist auch ein bißchen starr und Lähe;
 Wenn selbst der König mir ins Antlitz lähe
 Ich würde nichts die Augen niederzuschlagen.

Doch, liebe Mutter, offen will ich's sagen:
 Wie mächtig auch mein stolzer Mut sich blähe,
 In deiner selig süßen, trauten Nähe
 Ergreift mich oft ein demutvolles Zagen,
 Quält mich Erinnerung, daß ich verübet
 So manche That, die dir das Herz betrübet?
 Das schöne Herz, das mich so sehr geliebet!

- (b) Die Nacht ist feucht und stürmisch,
 Der Himmel sternenerleert;
 Im Wald unter rauschenden Bäumen
 Wandle ich schweigend einher.

Es flimmert fern ein Lichtchen
 Aus dem einsamen Jägerhaus;
 Es soll mich nicht hin verlocken,
 Dort sieht es verdrießlich aus.

Die blinde Großmutter sitzt ja
 Im ledernen Lehnstuhl dort,
 Unheimlich und starr wie ein Steinbild
 Und spricht kein einziges Wort.

2 (a) Give in English the substance and object of the *Prolog* of Heine's *Lyrisches Intermezzo*. 10

(b) Explain the following with reference to the context:— 20

(i) Er hat verloren seinen Schatz
 Drum ist das Grab der beste Platz
 Wo er am besten liegen mag
 Und schlafen bis zum Jüngsten Tag.

(ii) Wehe! Wehe! blut'ge Brüder!
 Wehe! Wehe! blut'ges Tal!
 Beide Kämpfer stürzen nieder,
 Einer in des andern Stahl.

3. (a) Give the present, past, and past perfect forms in first person singular, and all the imperative forms of the following verbs:—sein, werden, wissen, helfen, ertragen.

(b) Give the genitive singular, dative plural, accusative singular, and genitive plural of the following:—Bant, Menich, Punkt, Stunde, Gott, Herz, Gebirge, Blatt, Anabe, Universität. 20

4. Translate into German:—

30

My five-year-old daughter, Mini, cannot live without chattering. I really believe that in all her life she has not wasted a minute in silence. Her mother is often vexed at this, and would like to stop her prattle, but I would not. For Mini to be quiet is unnatural, and I cannot bear it long. And so my own talk with her is always lively. One morning, for instance, when I was in the midst of the seventeenth chapter of my new novel, my little Mini stole into my room, and said, 'Father! Ramdayal, the door-keeper, calls a crow a krow! He does not know anything, does he?'

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English:—

25

(a) Ehret die Frauen! Sie flechten und weben
Himmliche Rosen ins irdische Leben
Flechten der Liebe beglückendes Band,
Und in der Grazie züchtigem Schleier
Nähren sie wachsam das ewige Feuer
Schöner Gefühle mit heiliger Hand.

(b) Trodnet nicht, trodnet nicht
Tränen der ewigen Liebe!
Ach, nur dem halbgetrockneten Auge
Wie öde, wie tot die Welt ihm erscheint
Trodnet nicht, trodnet nicht,
Tränen unglücklicher Liebe.

2. Give, in your own German, the substance of the following:—

20

Der berühmte Philosoph und Buchdrucker Benjamin Franklin war nach Europa gekommen; er hatte einen Neger als Diener. Franklin war bekanntlich sehr wißbegierig und reiste daher in ganz England umher, um die Fabriten und andere Merkwürdigkeiten zu sehen. Sein Diener begleitete ihn immer und sah deshalb auch alles. Sie kamen endlich nach London zurück. Den folgenden Tag sagte Franklin zu dem Neger: „Nun hast du ganz England gesehen. Wie gefällt es dir denn?“ Der Neger schüttelte den Kopf und sagte: „England ist ein sonderbares Land. Alles arbeitet hier.

Das Wasser und der Rauch arbeiten. Die Pferde, die Ochsen und sogar die Hunde arbeiten. Alles arbeitet, doch eines arbeitet nicht. Das Schwein arbeitet nicht. Das Schwein tut nichts als essen, trinken und schlafen. Das Schwein allein ist ein Herr in England."

3. Translate into English :—

25

Das Schaf mußte von allen Tieren vieles leiden. Da trat es vor Zeus und bat, sein Elend zu mindern. Zeus schien willig und sprach zu dem Schafe : „Ich sehe wohl, mein frommes Geschöpf, ich habe dich allzu wehrlos erschaffen. Nun wähle, wie ich diesem Fehler am besten abhelfen soll. Soll ich deinen Mund mit schrecklichen Zähnen und deine Füße mit Krallen rüsten?“ „O nein,“ sagte das Schaf; „Ich will nichts mit den reißenden Tieren gemein haben.“ „Oder,“ fuhr Zeus fort, „Soll ich Gift in deinen Speichel legen?“ „Ach!“ versetzte das Schaf; „Die giftigen Schlangen werden ja so sehr gehaßt.“ „Nun was soll ich denn? Ich will Hörner auf deine Stirne pflanzen und Stärke deinem Nacken geben.“ „Auch nicht, gütiger Vater, ich könnte leicht so störrisch werden wie der Bock.“ „Und gleichwohl,“ sprach Zeus, „mußt du selbst Schaden können, wenn sich andre dir zu Schaden hüten sollen.“ „Müht' ich das?“ seufzte das Schaf. „O, so laß mich, gütiger Vater, wie ich bin; denn das Vermögen, Schaden zu können, erweckt, fürchte ich, die Lust, Schaden zu wollen, und es ist besser Unrecht leiden als Unrecht tun.“

4. Translate into German the following, and expand it in your own German :—

30

Health is quite the best form of wealth. There is nothing in the world that is worth taking in exchange for health. An ounce of health is better than a ton of gold. How can we keep healthy? In the first place obey seven great laws, namely: (i) breathe pure air, (ii) eat good food, (iii) drink pure water, (iv) keep clean, (v) do plenty of work, (vi) train your muscles, (vii) be temperate and regular in habits.

LATIN

Paper-setters— { MR. NALINIMOHAN CHATTERJEE, M.A.
 „ W. C. WORDSWORTH, M.A.

Examiners— { REV. FATHER V. VERBOCKHAVEN, S.J.
 MONSIEUR J. BUFFARD.

FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English:—

10

Qua re omittee istam, quaeso, doctorum hominum in contemnenda morte prudentiam: noli nostro periculo esse sapiens. Saepe enim venit ad auris meas, te idem istud nimis crebro dicere tibi satis te vixisse. Credo, sed tum id audirem, si tibi soli viveres aut si tibi etiam soli natus esses: omnium salutem civium cunctamque rem publicam res tuae gestae complexae sunt; tantum abes a perfectione maximorum operum, ut fundamenta nondum quae cogitas ieceris: hic tu modum vitae tuae non salute rei publicae, sed aequitate animi definies? Quid, si istud ne gloriae tuae quidem satis est? Cuius te esse avidissimum, quamvis sis sapiens, non negabis.

2. *Either*, What is the subject of Cicero's speech *Pro Marcello*? Explain the historical circumstances connected with it. 10

Or, Summarize what Cicero says about the personal and military character of Caesar.

3. Translate into English:—

10

Diversae voluntates civium fuerunt distractaeque sententiae; non enim consiliis solum et studiis, sed armis etiam et castris dissidebamus; erat enim obscuritas quaedam, erat certamen inter clarissimos duces; multi dubitabant quid optimum esset, multi quid sibi expediret, multi quid deceret, non nulli etiam quid liceret. Perfuncta res publica est hoc misero fatalique bello: vicit is, qui non fortuna inflammaret odium suum, sed bonitate leniret; neque omnis, quibus iratus esset, eodem etiam exsilio aut morte dignos iudicaret; arma ab aliis posita, ab aliis crepta sunt: ingratus est iniustusque civis, qui armorum periculo liberatus animum tamen retinet armatum, ut etiam ille melior sit, qui in acie cecidit, qui in causa animam profudit.

4. *Either*, Compare the position of a Roman citizen in the time of Cicero with that of an English citizen at the present day, in respect of political rights and privileges. 10

Or, Criticize the style of Cicero.

5. Translate into English:—

20

(a) Portitor has horrendus aquas et flumina servat
 terribili squalore Charon: cui plurima mento
 canities inculta iacet; stant lumina flamma;
 sordidus ex humeris nodo dependet amictus.
 ipse ratem conto subigit, velisque ministrat,
 et ferruginea subvectat corpora cymba,
 iam senior; sed cruda deo viridisque senectus.
 huc omnis turba ad ripas effusa ruebat;

matres, atque viri defunctaque corpora vita
magnanimū heroum ; pueri, innuptaeque puellae.
impositique rogis iuvenes ante ora parentum :
quam multa in silvis autumnī frigore primo
lapsa cadunt folia ; aut ad terram gurgite ab alto
quam multae glomerantur aves, ubi frigidus annus
trans pontum fugat, et terris immittit apricis.
stabant orantes primi transmittere cursum,
tendebantque manus ripae ulterioris amore :
navita sed tristis nunc hos nunc accipit illos ;
ast alios longe submotos arcet arena.

- (b) Illa, chorum simulans, euantes orgia circum
ducebat Phrygias ; flammam media ipsa tenebat
ingentem et summa Danaos ex arce vocabat.
tum me, confectum curis, somnoque gravatum,
infelix habuit thalamus, pressitque iacentem
dulcis et alta quies, placidaeque simillima morti.
« gregia interea coniux arma omnia tectis
amovet, et fidum capiti subduxerat ensem ;
intra tecta vocat Menelaum, et limina pandit :
scilicet id magnum sperans fore munus amanti,
et famam exstingui veterum sic posse malorum.
quid moror ? irrumpunt thalamo ; comes additus una
hortator scelerum, Aeolides. di, talia Graiis
instaure, pio si poenas ore reposco.
sed te qui vivum casus, age, fare vicissim,
attulerint, pelagine venis erroribus actus,
an monitu divum ? an quae te Fortuna fatigat,
ut tristes sine sole domos, loca turbida, adires ?

6. Translate, and explain the allusions in, the following :— 10

- (a) Vidi et crudeles dantem Salmonea poenas,
dum flammās Iovis, et sonitus imitatur Olympi.
(b) Illae autem, paribus quas fulgere cernis in armis,
concordes animae nunc, et dum nocte premuntur,
heu ! quantum inter se bellum, si lumina vitae
attigerint, quantas acies stragemque ciebunt !

7. *Either*, Describe a Roman funeral. 10

Or, Write a short life of Virgil.

8. Explain the use of the participle in grammar. In what respect is the Latin language deficient in participles ? Enumerate, with instances, the deponent verbs of which the past participle is used both actively and passively. 10

9. Distinguish (giving examples) between the uses of *utrum* and *sive*, *ne* and *ut non*, *utnam* with present subjunctive, and *utinam* with past subjunctive. 6

10. Turn the following extract into *oratio obliqua* dependent on a past tense :— 4

An si nihil tui cogitant sceleris, cavendum est ne quid inimici ? Qui ? Omnes enim, qui fuerunt, aut sua pertinacia vitam amiserunt aut tua misericordia retinuerunt, ut aut nulli supersint de inimicis aut qui fuerunt sint amicissimi.

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate:—

60

(a) *The grand old man of Rome. Cato the Censor. His many activities, including a history without names.*

In omnibus rebus singulari fuit industria. Nam et agricola sollers, et peritus iuris consultus, et magnus imperator, et probabilis orator, et cupidissimus litterarum fuit. Quarum studium etsi senior arripuerat, tamen tantum progressum lecit, ut non facile reperiri possit neque de Graecis neque de Italicis rebus, quod ei fuerit incognitum. Ab adolescentia confecit orationes. Senex historias scribere instituit. Earum sunt libri septem. Primus continet res gestas regum populi Romani, secundus et tertius, unde quaeque civitas orta sit Italica: ob quam rem omnes Origines videtur appellasse. In quarto autem bellum Poenicum est primum, in quinto secundum. Reliquaque bella pari modo persecutus est usque ad praeturam Servii Galbae qui diripuit Lusitanos. Atque horum bellorum duces non nominavit sed sine nominibus res notavit.

(b) *The story of Arion as told by Ovid.*

Ille metu vacuus, 'Mortem non deprecor,' inquit:
 'Sed liceat sumpta pauca referre lyra.'
 Dant veniam, ridentque moram. Capit ille coronam,
 Quae possit crines, Phoebe, decere tuos.
 Induerat Tyrio bis tinctam murice pallam:
 Reddidit icta suos pollice chorda sonos.
 Protinus in medias ornatus desilit undas;
 Spargitur impulsa caerulea puppis aqua.
 Inde fide maius, tergo delphina recurvo
 Se memorant oneri supposuisse novo.
 Ille sedens citharamque tenet, pretiumque vehendi
 Cantat, et aequoreas carmine mulcet aquas.
 Di pia facta vident. Astris delphina recepit
 Iupiter, et stellas iussit habere novem.

2. Translate into Latin:—

40

(a) Therefore, although it was winter, he left the city at once and in three days arrived at Lyons (*Lugdunum*), where he found the merchants awaiting him.

(b) The careful farmer plants trees though he may never see their fruit. In this we may find a good lesson for ourselves.

(c) Who will stand by me in so perilous an enterprise? We may not win. But we shall certainly win fame, even though we lose our lives and see no more the pleasant light of the sun.

(d) If he were to do what he says he will do, if he were to be untrue to all his promises, who henceforth would trust his people, or rely on any word that is heard from their cities?

(e) There is a society of men among us, bred up from their youth in the art of proving by words multiplied for the purpose that white is black, and black is white, according as they are paid.

FRENCH

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FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English any *two* of the following passages:— 25

(a) A peine descendu du dortoir, nous partions pour la Sorbonne sous la conduite d'un maître d'étude. Chacun de nous avait déjeuné d'une côtelette et d'une tasse de café, et reçu en outre un viatique consistant en un petit pain, un bout de saucisson et une demie bouteille de vin. Provisions aussitôt engouffrées au fond du filet classique. Mais ce n'est pas tout d'avoir un filet, il faut encore qu'il soit bien garni. Aussi ne manquions-nous guère, en passant dans la rue de Buci, de le renforcer d'un pâté à la croûte dorée, d'un poulet froid, voire même d'une bouteille supplémentaire. Les sybarites ajoutaient des cerises et jusqu'à des pots de crème. On parle encore dans la rue Saint-Jacques d'un jeune Lucullus qui arriva un matin avec un cargaison de bananes.

(b) Les deux luteurs se prirent corps à corps. Je ne pus retenir un frisson en voyant les longs bras noirs du bronze florentin s'enrouler comme deux serpents autour de la taille de Baudouin. Mais sa chair à lui ne frémit pas. Il se laissa faire, se balança un instant comme pour donner une meilleure prise à son adversaire, puis tout à coup, s'inclinant à gauche, et levant les deux bras, il enferma le cou du nègre sous son aisselle droite et le maintint dans cet étau. Pollux se secoua, tourna sur lui-même pour se dégager. Tout fut inutile. Baudouin tournait avec lui, montrant successivement à tout le cercle la tête noire qui grimaçait derrière ses reins. Le nègre prit alors le parti de lâcher prise et de se laisser choir. Baudouin le suivit sur l'arène sans le lâcher.

(c) Cela lui fera du bien. Allez-vous-en, monsieur l'apothicaire, tâter un peu son pouls, afin que je raisonne tantôt avec vous de sa maladie. (En cet endroit, il tire Gêronte à un bout du théâtre, et, lui passant un bras sur les épaules, lui rabat la main sous le menton, avec laquelle il le fait retourner vers lui, lorsqu'il veut regarder ce que sa fille et l'apothicaire font ensemble, lui tenant cependant le discours suivant pour l'amuser.) Monsieur, c'est une grande et subtile question entre les docteurs, de savoir si les femmes sont plus faciles à guérir que les hommes. Je vous prie d'écouter ceci, s'il vous plaît. Les uns disent que non, les autres disent que oui: et moi, je dis que oui et non.

2. Give in brief the plot of Molière's comedy *Le Médecin malgré lui*. 15

3. Write short notes on:—Machiavelisme, Aztèque, les Sybarites, taupin. 10

4. 'In French, a noun in the singular number when brought into the plural number, ends generally in an *s* or an *x*.' Justify this remark with the help of rules of French grammar and suitable examples. 10

5. In French, we have the following forms of the past tense in the indicative mood:—(a) past indefinite, (b) past definite, and (c) past imperfect. Explain fully their use and give examples. 10

6. Translate into French:—

30

Time cures everything. Time also destroys everything. In a word time effaces everything. Time ever flies. Time does not wait for anybody. Be in time. When time goes away once, it will never come back again. Move with the time, do not hesitate.

If it does not rain this evening we shall go out and see our friends. The day after to-morrow is my birthday. Will you come and have dinner with us in the evening? Many friends and relations of ours will be coming to dine with us, too.

Good houses are rare in this town. We are living in an old house, and we are always frightened when there is a storm. We will change the house as soon as possible.

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English one of the following passages:—

(a) *Le Chemin Creux.*

Le long d'un chemin creux que nul arbre n'égaie,
Un grand champ de blé mûr, plein de soleil, s'endort,
Et le haut du talus, couronné d'une haie,
Est comme un ruban vert qui tient des cheveux d'or.
De la haie au chemin tombe une pente herbeuse
Que la taupe soulève en sommets inégaux,
Et que les grillons noirs à la chanson verbeuse
Font pétiller de leurs monotones échos.
Passe un insecte bleu vibrant dans la lumière,
Et le lézard s'éveille et file, étincelant,
Et près des flaques d'eau qui luisent dans l'ornière,
La grenouille coasse un chant rauque en râlant.
Le chemin est très loin du bourg et des grand'routes;
Comme il est mal commode, on ne s'y risque pas,
Et du matin au soir les heures passent toutes
Sans qu'on voie un visage ou qu'on entende un pas.

(b) *Les Éléphants*

D'un point de l'horizon, comme des masses, brunes,
Ils viennent soulevant la poussière, et l'on voit,
Pour ne point dévier du chemin le plus droit,
Sous leur pied large et sûr crouler au loin les dunes.
Celui qui tient la tête est un vieux chef. Son corps
Est gercé comme un tronc que le temps sablonne et mine;
Sa tête est comme un roc, et l'arc de son échine
Se voûte puissamment à ses moindres efforts.
Sans ralentir jamais et sans hâter sa marche,
Il guide au but certain ses compagnons poudreux;
Et, creusant par derrière un sillon sablonneux,
Les pèlerins massifs suivent leur patriarche.
L'oreille en éventail, la trompe entre les dents,
Ils cheminent, l'œil clos. Leur ventre bat et fume,
Et leur sueur dans l'air embrasé monte en brume;
Et bourdonnent autour mille insectes ardents.

2. Translate into English *one* of the following passages:— 25

(a) Je ne suis pas de ceux qui font grand état des connaissances humaines ; et je confesse néanmoins que je ne puis contempler sans admiration ces merveilleuses découvertes qu'a faites la science pour pénétrer la nature, ni tant de belles inventions que l'art a trouvées pour l'accommoder à notre usage. L'homme a presque changé la face du monde ; il a su dompter par l'esprit les animaux qui le surmontaient par la force ; il a su discipliner leur humeur brutale, et contraindre leur liberté indocile. Il a même fléchi par adresse les créatures inanimées ; la terre n'a-t-elle pas été forcée, par son industrie, à lui donner des aliments plus convenables ; les plantes, à corriger en sa faveur leur aigreur sauvage ; les venins même, à se tourner en remèdes pour l'amour de lui ? Il serait superflu de vous raconter comme il sait ménager les éléments, après tant de sortes de miracles qu'il fait faire tous les jours aux plus intractables, je veux dire au feu et à l'eau.

(b) Ne croyez pas, monseigneur, qu'on vous reprenne si sévèrement, pendant vos études, pour avoir simplement violé les règles de la grammaire en composant. Il est sans doute honteux à un prince, qui doit avoir de l'ordre en tout, de tomber en de telles fautes ; mais nous regardons plus haut quand nous en sommes si fâchés ; car nous ne blâmons pas tant la faute elle-même, que le défaut d'attention, qui en est la cause. Ce défaut d'attention vous fait maintenant confondre l'ordre des paroles ; mais si nous laissons vieillir et fortifier cette mauvaise habitude, quand vous viendrez à manier, non plus les paroles, mais les choses mêmes, vous en troublez tout l'ordre. Vous parlez maintenant contre les lois de la grammaire : alors vous mépriserez les préceptes de la raison. Maintenant vous placez mal les paroles : alors vous placerez mal les choses ; vous récompenserez au lieu de punir ; vous punirez quand il faudra récompenser.

3. Translate into French:—

- (a) His brother and sister are both happy. 10
 You flatter yourself more than you ought.
 Now-a-days every one lives for himself.
 Have you asked her what time it is?
 He and I went for a walk yesterday.

(b) An Indian merchant one day brought an elephant to sell at a village fair. As soon as he got there, he noticed a man who kept walking round and round the elephant, examining it with the greatest curiosity. 'Tell me, my friend', said the merchant, 'how were you able to find out the blemish (*défaut*) in his left hind leg? I thought I had completely concealed it.' 'I discovered nothing' said the other with amazement, 'It was the first time that I saw an elephant in my life, and I was trying to find out which was his head and which was his tail.' 20

(c) Once upon a time there were four girls, who had enough to eat and drink, a good many pleasures, and kind friends and parents who loved them dearly, and yet they were not contented. These girls wished to be good, and made many excellent resolutions, but they did not keep them very well, and were constantly saying: 'If we only had this' or 'If we could only do that'. They forgot how much they already had, and how many pleasant things they could do. So they asked an old woman what charm they could use to make themselves happy. 20

BENGALI TEXT (FOR FEMALE CANDIDATES).

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Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English either of the following passages :—

16

(a) প্রভু শাপ না দিলেন সদয় হৃদয় ।
আমি শাপ দিব তোমা ফলিবে নিশ্চয় ॥
সীতা উদ্ধারিবে রাম আপন বিক্রমে ।
সীতারে আনিবে ঘরে বহু পরিশ্রমে ॥
কিন্তু সীতা না রহিবে সদা তব পাশ ।
কিছুদিন থাকিয়া করিবে স্বর্গবাস ॥
কান্দাইলা যেইরূপ কিঙ্কিণী নগরী ।
কান্দাইয়া তোমাতে যাইবে স্বর্গপুরী ॥
আমি যদি সত্যী হই ভারত ভিতরে ।
কান্দিবে সীতার হেতু কে খণ্ডিতে পারে ॥

(b) স্রষ্টার এমন সৃষ্টি, যে ভাবে করিবে দৃষ্টি
দেখ মঙ্গলের ভাবে মঙ্গল সকল
অমঙ্গল ভাবে দেখ সব অমঙ্গল ।
কি মঙ্গল, অমঙ্গল, সুখ দুঃখ যাহা বল
সকলি মানব মনে ; জগত কেবল
সুখময়, শোভাময় অনন্ত মঙ্গল ।

2. Explain any four of the following passages with reference to the context :—

24

(a) জগত ব্যথা-ভরে জাগিছে জোড়-করে
এ মহা কোজাগরে কে দিবে বরদান,
এস হে এস শ্রেষ্ট ! এস হে মৈত্রেয় !
কুরতা মৃত্যুর করহে অবসান ।

(b) কুক্ষণে ভেটিলে দৌহ দৌহো রিপুভাবে !

বিধির নির্বন্ধ কিন্তু কে পারে খণ্ডাতে ?

যে বিধি হে মহাবাহু, অজিলা পবনে

সিদ্ধু-অরি ; যুগ-ইন্দ্রে গজ-ইন্দ্র-রিপু ;

খগেন্দ্র নগেন্দ্র-বৈরী ; তাঁর মায়া-ছলে

রাঘব রাবণ-অরি—দোষিব কাহারে ?

(c) কেন বা শিখিহু

অজ্ঞবিদ্যা, শত ধিক্ বলি সে বিদ্যারে

নহে যাহা জ্ঞান-ধর্ম-মহেশ্বর হেতু ।

কি কাজে মানবী শক্তি, মনুষ্য কিবা

ত্নায়ে অহুসরি যদি না চলে মানব ?

(d) শাস্ত কণ্ঠে হরি

উত্তরিলি, শাস্ত নেত্রে চাহি অবিচল

প্রভাত আকাশ, স্থির—“দারুক ! দারুক !—

ষাদবের কুরুক্ষেত্র ! হয়েছে সাধিত

সাধুদের পরিজ্ঞান, দুষ্কৃত বিনাশ

ধরাতলে ধর্মরাজ্য হয়েছে স্থাপিত ।

যুগ শেষ ! লীলা শেষ”—

(e) যেথায় থাকে সবার অধম দৌনের হ’তে দীন

সেই খানে যে চরণ তোমার রাজে

সবার পিছে, সবার নীচে

সব-হারাদের মাঝে ।

(f) মুক্তি ? ওরে মুক্তি কোথায় পাবি

মুক্তি কোথায় আছে ?

আপনি প্রভু সৃষ্টি বীধন পরে’

বীধা সবার কাছে ।

3. Develop the idea contained in the following lines :—

10

সীমার মাঝে, অসীম, তুমি
বাজাও আপন স্বর।
আমার মধ্যে তোমার প্রকাশ
তাই এত মধুর।

4. (a) Construct a sentence using each of the following words :— 5

আহরণ, অনাহত, আততায়ী, পরিপন্থী, মনগড়া।

(b) Form adjectives from the following words :— 6

বিকার, বেদ, হর্ষ, বিদ্বাৎ, অপহরণ, আহ্বান।

(c) Expound the following *samāsas*, mentioning the name of the *samāsa* in each case :— 10

মহামতি, উর্ণনাভ, উন্ননা, একচোখো, মুখচোরা।

(d) Give the correct forms of :— 4

দৈবায়িক, আবশ্যকীয়, লজ্জাস্কর, সৌজন্যতা।

5. Translate into English :—

25

Either, (a) বন্ধিমচন্দ্রের কাজকর্ম দেখিয়া ছোটলাট সাতিশয় তুট হইলেন; বলিলেন, “তুমি সীমারে গিয়া আমার সহিত সাক্ষাৎ করিবে।” সাহেব একটা সময় নির্দিষ্ট করিয়া দিলেন। বন্ধিমচন্দ্র নির্দিষ্ট সময়ের কিছুপূর্বে গঙ্গার ঘাটে আসিলেন। লাট সাহেবের জাহাজ তখন মাঝগাঙ্গে। পহঁছিতে হইলে নৌকা ভিন্ন উপায় নাই। একখানি নৌকা ছিল, জেলার ম্যাজিস্ট্রেট তাহাতে উঠিয়া লাট দর্শনে যাইবার উদ্যোগ করিতেছেন। তাঁহার ইচ্ছা নয় যে তিনি বন্ধিমের সঙ্গে এক নৌকায় যান। বন্ধিমচন্দ্র তাহা বুঝিয়া বলিলেন, “আপনাকে রাখিয়া নৌকা ফিরিয়া আসিতে অনেক বিলম্ব হইবে—আমি নির্দিষ্ট সময়ে ছোট লাটের নিকট পহঁছিতে পারিব না।” ম্যাজিস্ট্রেট বলিলেন, “তুমি আমার সহিত আসিতে পার, কিন্তু আমি আগে কার্ড পাঠাইব।” বন্ধিমচন্দ্র সম্মতি জ্ঞাপন করিয়া নৌকায় উঠিলেন। “রোটারী” পহঁছিয়া ম্যাজিস্ট্রেট তাঁহার কার্ড পাঠাইয়া দিলেন। ছোটলাট কিন্তু সেই কার্ডের পৃষ্ঠে লিখিয়া দিলেন, “তুমি এক্ষণে অপেক্ষা কর—ডিপুটি বন্ধিম বাবুকে আগে পাঠাইয়া দাও।”

Or, (b) শাহাজাহানের বিদ্রোহ দমন করিয়া সেনাপতি মহাবৎ খাঁ রাজ্যের মধ্যে প্রধান হইয়া উঠিলেন। তখন তিনি হুরজাহানের কোপে পড়িয়া গেলেন। হুরজাহানের ইচ্ছা নয় যে, অল্প কেহ ক্ষমতালী হইয়া উঠে। সুতরাং তিনি মহাবতের সৰ্ব্বনাশের চেষ্টা করিতে লাগিলেন। মহাবৎ তাহা বুঝিতে পারিয়া বিদ্রোহী হইলেন এবং জাহাঙ্গীর ও হুরজাহান যখন কাবুলে যাইতেছিলেন, তখন মহাবতের রাজপুত সৈন্য জাহাঙ্গীরকে ঘিরিয়া ফেলিল। হুরজাহান অসীম বীরত্বের সহিত স্বামীর উদ্ধার সাধন করিতে চেষ্টা করিলেন। হস্তীর উপরে বসিয়া তিনি নিজ সৈন্য চালনা করিতে লাগিলেন। অবশেষে যখন মাহত নিহত হইল এবং শত্রুর তীর হস্তীর শুণ্ডে বিদ্ধ হইল, তখন হস্তী অস্থির হইয়া ঝিলামে বাষ্প প্রদান করিল। সকলেই ভাবিল যে, হুরজাহানের জীবনের কোনও আশা নাই। কিন্তু কিয়ৎক্ষণ পরে হস্তী গিয়া তীরে উঠিল। অতঃপর হুরজাহান মহাবতের বন্দি নী হইতে চাহিলেন। পরে একদিন বাদশাহ ও বেগম উভয়ে কারাগার হইতে পলায়ন করিলেন।

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate either of the following passages into English :—

5

(a) ইতিহাসে দেখা যায় হিন্দুগণ মরিতে কুণ্ঠিত হন নাই। মুসলমানেরা যুদ্ধ করিয়াছে, আর হিন্দুরা দলে দলে আত্মহত্যা করিয়াছে। মুসলমানদের যুদ্ধের মধ্যে একদিকে ধর্মোৎসাহ, অপরদিকে রাজ্য অথবা অর্থলোভ ছিল; কিন্তু হিন্দুরা চিতা জ্বালাইয়া জ্বী কণ্ঠা ধ্বংস করিয়া আবালবৃদ্ধ মরিয়াছে। তাহাকে বীরত্ব বলিতে পার কিন্তু তাহাকে যুদ্ধ বলে না।

(b) নরেন কহিতে লাগিল, বাস্তবিক, চাকরি আমার ভালও লাগে না, পারিয়ে নে। অভাব আমার খুবই সামান্য,—আপনার মত কোন বড় লোক দুবেলা চারটি-চারটি খেতে দিত, আর নিজের কাজ নিয়ে থাকতে পারতুম, ত আমি আর কিছুই চাইতুম না,—কিন্তু সে রকম বড় লোক কি

আর আছে? বনিয়া উচ্চ হাসির ঢেউ তুলিয়া দিল। বিজয়া পূর্বের মতই নত-মুখে নীরবে বসিয়া রহিল।

2. Explain in Bengali any *three* of the following with reference to the context :— 15

(a) কথার দ্বারা আমরা যাহা ব্যক্ত করিয়া থাকি তাহা বহুল পরিমাণে সুস্পষ্ট সুপরিষ্কৃত—কিন্তু আমাদের মনে অনেক সময় এমন সকল ভাবের উদয় হয় যাহা বর্ণনায় প্রকাশ করিতে পারি না, যাহা কথার অতীত, যাহা অহেতুক—সেই সকল ভাব, অন্তরাঙ্গার সেই সকল আবেগ উদ্বেগগুলি সঙ্গীতেই বিশুদ্ধ রূপে ব্যক্ত হইতে পারে।

(b) সাধারণত আমাদের জাতির মধ্যে একটি বিজ্ঞবান্ধকোর লক্ষণ আছে—আমাদের চক্ষে সমস্ত জগৎ যেন জরাজীর্ণ হইয়া গিয়াছে। সৌন্দর্যের মায়া আবরণ যেন বিস্তৃত হইয়াছে—এবং বিশ্ব সংসারের অনাদি প্রাচীনতা পৃথিবীর মধ্যে কেবল আমাদের নিকটই ধরা পড়িয়াছে।

(c) সত্যের স্থান বুকের মধ্যে, মুখের মধ্যে নয়। কেবল মুখ দিয়ে বার হয়েছে বলেই কোন জিনিস কখনো সত্য হয়ে উঠে না। তবুও তাকেই যারা সকলের অগ্রে, সকলের উর্দ্ধে স্থাপন করতে চায়, তারা সত্যকে ভালবাসে বলেই করে না, তারা সত্যভাষণের দম্ভকেই ভালবাসে বলে করে।

(d) নরেন্দ্রর চিন্তের মাঝে আজ অনেক খানি গ্লানি জমা হইয়া উঠিয়াছিল; কিন্তু এই বুকের সন্তোষ, সহৃদয়তা ও অন্তরের শুচিতার সংস্পর্শে তাহার অর্ধেক পরিষ্কার হইয়া গেল। কথায় কথায় সে বুঝিল, ধর্ম বস্তুটিকে বৃদ্ধ বৃদ্ধ দিয়া ভালবাসে, এবং সেই অকৃত্রিম ভালবাসাই যেন ধর্মের সত্য দিক্‌টার প্রতি তাঁহার চোখের দৃষ্টিকে অসামান্যরূপে স্বচ্ছ করিয়া দিয়াছে।

3. *Either*, Discuss in Bengali Rashbehari's character in দস্তা। 10

Or, Describe briefly, in Bengali, the influence of Bihari Lal Chakrabarti on Rabindranath. 10

4. Explain in Bengali any *three* of the following passages :— 30

(a) পাশ্চাত্য শিক্ষার মধ্যে যাহা নির্দোষ, আমাদের পক্ষে যাহা পরম উপকারক, যে সমৃদ্ধ গুণগ্রাম অর্জন করিতে পারিলে আমাদের সুন্দর সমাজদেহ ও দেশাত্মবোধ, আরও সুন্দরতর, সুন্দরতম হইবে, সেই সকল বিষয় আমাদের মাতৃভাষার সাহায্যে বন্ধের সর্ব সাধারণের গোচরীভূত করিতে হইবে।

(b) একাকী গায়কের নহে ত গান
 মিলিতে হবে দুই জনে ।
 গাহিবে একজন খুলিয়া গলা
 আর জনে গাবে মনে ।
 তটের বৃকে লাগে জলের ঢেউ
 তবে সে কলতান উঠে,
 বাতাসে বন-সভা শিহরি কাঁপে
 তবে সে মর্ম্মর ফুটে ।

(e) মানব-হৃদয় স্বভাবতঃই স্বাধীনতা প্রিয়, তাহা অপরের শাসন গ্রহণ করিতে অনিচ্ছুক । তাহার দেহকে বাঁধিয়া যত নিকটে আনিবে, তাহার হৃদয় তোমার নিকট হইতে ততই দূরে সরিয়া যাইবে । তাহাকে স্বাধীনতা দাও, তোমার যদি মোহিনী শক্তি থাকে, তবে তাহার হৃদয় স্বতঃই তোমার নিকট ছুটিয়া আসিবে ।

(d) সকল শিক্ষার আদি, মধ্য, অন্ত, শিক্ষার সার হইতেছে—পরের ভাবনা ভাবিতে শিক্ষা । যাহার এ শিক্ষা নাই, সে শিক্ষিত নহে । যিনি পরের ভাবনা ভাবিতে শিখেন নাই, তিনি বিধান হইতে পারেন, বুদ্ধিমান হইতে পারেন, কিন্তু তাঁহাকে শিক্ষিত বলিতে পারি না । এই শিক্ষা নাই বলিয়াই আমাদের দেশের এত অবনতি ।

5. Re-write the following, correcting all errors :—

6

সেবার মোদের দেশে ভীষণ ধান্ডা হয়েছিল । দুরাবস্থার নিশি অবশানে সুখ-চন্দ্রমা উদয় হইয়া লোকের মনোপীড়া দূরীভূত হইল । ভাগ্যবসতঃ দুবেলা পেট ভড়িয়া থাইতে পারিয়া পরম সন্তোষ হইল ।

6. (a) Form adjectives from the following words and compose sentences to illustrate the use of those :—

5

ঋষি, কুল, যশঃ, অতিথি, স্বর্ণ ।

(b) Expound the *samāsas* in the following words :—

4

পটলচেরা, হাড়ভাঙ্গা, নির্জ্জন, পুণ্ডরীকাক্ষ ।

7. Translate into English *either* of the following :—

25

(a) তখন বামনের দেশের কথা মনে পড়লো। সেখানে দেখেছি—
ছ'ইঞ্চি উচু মানুষ; এ যে দেখি প্রায় ৬০ ফুট উচু। বামনদের তুলনায়
ছিলুম আমি পাহাড়ের মত মানুষ। আমার তুলনায় যে এরাও তাই।
বুঝলাম বামনের দেশে গিয়ে আমার মনে যে অহঙ্কার জন্মেছিল,
ক্ষুদ্রকায় মানুষের উপর বাহাদুরী দেখিয়ে যে গৌরব অমুভব
করেছিলুম, ঈশ্বর এইবার দৈত্যদের দেশে পাঠিয়ে আমার সেই দর্প চূর্ণ
করলেন। ক্ষুদ্রকায় মানুষকে আপন শরীর দেখিয়ে তাদের ভয় জন্মাতুম—আর
আজ ভীষণ দৈত্যদের দেহ দেখে নিজেই ভয়ে কাঁপছি। জাহাজ ত ভেসে
চলে গেল। আমি যে এখানে পড়ে রয়েছি,—তা তো তারা তখন বুঝতে
পারে নি। এখন জেনে আবার ফিরেও আসতে পারে। কিন্তু তা কি
সম্ভব? যে ভীষণ দৈত্য দেখেছে!

(b) চতুর্দিক অন্ধকার হইয়া আসিয়াছিল, কুলকুল শব্দের মধ্যে
শুনিতে পাইলাম, “আমরা যথা হইতে আসি, আবার তথায় ফিরিয়া যাই।
দীর্ঘ প্রবাসের পর উৎসে মিলিত হইতে যাইতেছি।” জিজ্ঞাসা করিলাম,
“কোথা হইতে আসিয়াছ, নদী?” নদী সেই পুরাতন স্বরে উত্তর করিল,
“মহাদেবের জটা হইতে।” একদিন আমি বলিলাম, “নদী, আজ বহুকাল
অবধি তোমার সহিত আমার সখ্য। পুরাতনের মধ্যে কেবল তুমি!
বাল্যকাল হইতে এ পর্য্যন্ত তুমি আমার জীবন বেঁটন করিয়া আছ, আমার
জীবনের এক অংশ হইয়া গিয়াছ; তুমি কোথা হইতে আসিয়াছ, জানি না।
আমি তোমার প্রবাহ অবলম্বন করিয়া তোমার উৎপত্তিস্থান দেখিয়া আসিব।”

HINDI TEXT FOR FEMALE CANDIDATES

Paper-setters :— { LALA SITARAM, B.A.
PANDIT SAKALNARAYAN SARMA

Examiners :—Mr. AMBIKAPRASAD BAJPAYI.

FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. *Raghusambhava* is said to be the translation of a portion of *Raghu-vaṇśa*, Who was Raghu? What is he famous for? Do you know any other kings of his *vaṇśa*? 10

2. Explain in Hindi one of the following passages :— 10

(a) प्रजा न पीडित लब्धो राजभूत्यन सों नेकहु ।

ईति भौति की नाम सुन्यो परजा नहि एकहु ॥

इतही निर्मित होहि वस्तु सिंगरी सब बिधि की ।

ही स्वतंत्र सब भांति प्रजा परिपूरन ऋधि की ॥

(b) यह जो सन्मुख देवदास वर बिटप लखाई ।

सुत करि पालत सदा कृपा धरि तेहि गिरि राई ॥

गुह जननी-कुच-हेम-कुम्भ-पय परम सोहावन ।

तासु अपूरव खाद जान यह तरु मन भावन ॥

3. Explain the allusion in the following :— 5

रूप किरात धरे हर सों तेहि कानन में दरसी नरनायक ।

4. Write short notes on the following expressions :— 5

आकाशकुसुम, कुरंगदण्डा, षडंग, पुंसवन ।

5. Translate into English :— 20

बुद्धिमान जो कुछ कहैं सो सुगु सहित बिचार ।

यद्यपि ताके कर्म नहि रहैं वचन असुसार ॥

सीधे की सीधा नहीं कबहुँक सकत अगाय ।

जो यह देय प्रमान सों मोहि न गुह लखाय ॥

नीति ज्ञान उपदेश नित यहन करैं बुध लोग ।

लिखी नीति जो भौति पै तज न निदरन जोग ॥

मठ तजि रक चटसार में आयी एक निहङ्ग ।
 विद्यामन में बैठ सों झंडि फकीरन रङ्ग ॥
 मैं पूछ्यो तोहि दुहुन में कौन विशेष लखान ।
 विद्यामन को संग यह जो अब तोहि सुधान ॥
 “निजहि बचावन भैं”, कछ्छी, “लगे रहैं वे लोग,
 “बूढ़त के उद्धार हित इनके नित उद्योग” ॥

6. Re-write the following correcting mistakes :— 13

अरथ सब का लिये कामना का वस्तु है। किन्तु अरथ है क्या चौज़ ? यह कोई नहीं समझती। मैं अरथ की असल रूप जान ली हूँ। विश्व में अगर कोई एक पदार्थ है तो अरथ है। अरथ की सिवाय यहाँ कोई का असतिल नहीं है। यदि तुम्हारा पास धन है तो तुम में मनुष्यत्व हो सकती है।

7. How are diminutives formed in Hindi ? 12

8. Translate into English :— 15

(a) इंग्लैंड की स्वतंत्रता-सूचक वायु के पहलू ही भोके ने रामानन्द के मस्तिष्क की देशी हित के विचारों से भर दिया। उसने यह बात अच्छी तरह जान ली कि बिना मातृभाषा की उन्नति के देश की यथार्थ उन्नति होना संभव नहीं। अतएव उसने अपने हिंदी के बन्ने का निकाला फिर उसने विविध विषयों पर पढ़ी हुई अनेक पुस्तकों का सारांश भिन्न भिन्न लेखों की शृंखला में लिखना शुरू किया। रामानन्द की दी ही काम थे। आई० सी० एस० की पाठ्य पुस्तकों पढ़ना और हिंदी लेख लिखना। सिर्फ, इन दो कामों में लीन रामानन्द लंदन में इस तरह रहने लगा जैसे कोई जंगल में रहता हो।

(b) कर्तव्य वह वस्तु है जिसे करना हम लोगों का परम धर्म है और जिसके न करने से हम लोग और लोगों की दृष्टि में गिर जाते और अपने कुचरित्र से नीच बन जाते हैं। प्रारंभिक अवस्था में कर्तव्य का करना बिना दबाव के नहीं हो सकता क्योंकि पहली पहलू मन आपही उसे करना नहीं चाहता 10

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Explain in Hindi :— 10

फकीरों के गुन हैं, ईश्वर का भजन, कीर्तन, सेवा, भक्ति, शील, सन्तोष, उसकी पूजा करना उसी का भरोसा रखना और उसी की मरजी में राजी रहना। दया, सहज, शक्ति

रखना। जिस में ये गुण हैं वही फकीर है चाहे वह गृहस्थ ही के भेस में क्यों न हो। जो भगवान का भजन नहीं करता मन की भावना का दास है वह साधुओं के भेस में होने पर भी भसाधु है।

बाहिर दोंग रहे फिर भीतर भक्ति न भाव।

सतरंग परदा डारिकें काहे टाट दुराव ॥

2. Write out in Hindi an account of Sūrdās as given by himself at the end of his *Drishṭakūṭ* (दृष्टकूट). 10

3 Expound [the *samāsas* in :—दृष्टकूट, शिष्टाचार, पद्यव्यय, विक्रमादित्य, देशान्तर। 5

4. Write out briefly in your own words संतोष के गुण as explained in the *Nitibātikā*. 5

5 Explain in Hindi :— 30

बात की महिमा

सच पूछिये तो इस बात की क्या बात है जिसके प्रभाव से मानवजाति समस्त जीवधारियों की शिरोमणि कहलाती है। शक सारिकादि केवल थोड़ी सी समझने योग्य बातें उद्धरित कर सकते हैं इसी से अन्य नभचारियों की अपेक्षा आदित ससम्भे जाते हैं। फिर कौन न मानेगा कि बात की बड़ी बात है हां बात की बात इतनी बड़ी है कि परमात्मा की लोग निराकार कहते हैं तो भी इसका सम्बन्ध उसके साथ लगाये रखते हैं। वेद ईश्वर का वचन है। कुरान शरीफ कलामुल्लाह है। होली बाइबिल वर्ड आफ गाड है। यह वचन, कलाम, वर्ड बातही के पर्याय हैं जो प्रत्यक्ष में मुख के बिना स्थित नहीं कर सकतीं।

6. Translate into English :— 25

आंसू

मनुष्य के शरीर में आंसू भी गड़े हुए खजाने के साफ़िक् हैं। जैसा कभी कोई नाजुक वक्त, आ पड़ने पर संचित पूंजी ही काम देती है उसी तरह हर्ष शोक भय इत्यादि भावों की प्रगट करने में जब सब इन्द्रियां खणित होकर हार मान बैठती हैं तब आंसू ही उन उन भावों की प्रकट करने में सहायक होता है। चिरकाल के वियोग के उपरान्त जब किसी दिली दोस्त से मुलाकात होती है तो उस समय हर्ष और प्रमोद के उपान में अंग अंग ठीले पड़ जाते हैं, वाक्य गड़गड़ कण्ठ रुंध जाता है ; जिन्हा इतनी शिथिल पड़ जाती है कि उससे मिलने की खुशी की प्रगट करने के लिये एक एक शब्द मारों बीभ सा मालूम होता है।

7. How are adjectives formed from nouns in Hindi ? 15

HISTORY

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FIRST PAPER

History of England

Candidates are required to give their answers in their own words as far as practicable.

The questions are of equal value.

Six questions to be attempted, of which two must be from each group.

1. 'Whether as a warrior, as a statesman, as a lawgiver, as a scholar, as a reformer, Alfred appears equally great.' Amplify.
2. Estimate the importance of the conversion of England to Christianity.
3. 'The Magna Charta is the Bible of the English Constitution.' Discuss.
4. Give an account of the Feudal System.
5. 'We may sum up Edward I's policy as one of orderly consolidation.' Expand.
6. Give a short account of the reign of Henry VII.
7. 'Elizabeth's reign is one long struggle against the Counter-Reformation.' Explain.

B

8. 'Charles I came to the throne in 1625, and in twelve years had succeeded in uniting the whole nation against him.' Amplify.
9. Write a short essay on the Elder Pitt.
10. 'The effects of the Industrial Revolution were felt not less in political than in other spheres of national life.' Explain.
11. What were the causes of the Revolution of 1688?
12. Narrate shortly the history of England's relations with Ireland since 1815.

13. Review the career of Sir Robert Peel, and attempt a critical estimate of his reforms.

14. Annotate any *four* of the following:—

- (a) The Synod of Whitby.
- (b) The South Sea Bubble.
- (c) The Berlin Decree.
- (d) The Grand Remonstrance.
- (e) The Treaty of Utrecht.
- (f) The Anti-Corn Law League.

SECOND PAPER

History of Greece and Rome

Candidates are required to give their answers in their own words as far as practicable.

The questions are of equal value

Answer only SIX questions, of which at least TWO must be from each group.

GROUP A

1. Account for the rise of Sparta as the strongest military power in Greece, and describe its constitution.
2. Give a short account of the establishment of democracy in Athens from the time of Solon to the days of Pericles.
3. Discuss the causes of the Persian invasion of Greece and its consequences.
4. Analyse the real causes of the Peloponnesian War, and discuss the consequences of the defeat of Athens.
5. Sketch the career of any *one* of the following:—(a) Epaminondas, (b) Socrates.
6. Form an estimate of the work of Philip of Macedon.

GROUP B

7. Describe in brief the struggle between the Patricians and the Plebeians and enumerate the results of the struggle.
8. Sketch the history of the establishment of Roman supremacy outside Italy from the conquest of Sicily to the final downfall of Carthage.
9. What were the causes of the Second Punic War? Give a brief account of its leading events.
10. Sketch the career of Sulla, and enumerate the more important laws passed by him.
11. Give a short account of the Roman Empire after the death of Constantine, and account for its decline and fall.
12. Write notes on any *four* of the following:—
 - (a) The Senate.
 - (b) The *Comitia Centuriata*.
 - (c) The Samnite Wars.
 - (d) The Battle of Pydna.
 - (e) Cato the Censor.
 - (f) Scipio Africanus.
 - (g) Cicero.
 - (h) The office of the Praetor.
 - (i) The Flavian Emperors.

LOGIC

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„ BIJAYGOPAL SARKAR, M.A.		
„ KALIHAR SARKAR, M.A.		
„ INDUBHUSHAN SENGUPTA, M.A.		
„ NAGENDRANATH SENGUPTA, M.A.		

FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. *Either*, Discuss the proposition that Logic is the Science not of Truth but of Consistency. 14

Or, Distinguish between Science and Art, illustrating your point by means of examples. Is Logic a Science or an Art? Discuss the question fully.

2. *Either*, Explain, with concrete illustrations, the fundamental principles of Logic. 14

Or, Enumerate and explain the Predicables. In what sense is the Genus a part of Species, and the Species a part of Genus?

3. *Either*, Explain what you understand by Definition and Division in a logical sense, and exhibit their relation to each other. Wherein does Definition differ from Description?

Or, Explain and illustrate the distinction between Logical, Physical, and Metaphysical Division. What is Division by Dichotomy?

4. *Either*, What is meant by the Import of Propositions? Distinguish between a Verbal and a Real Proposition, giving concrete examples. 14

Or, Define Opposition. Is Subalternation a form of Opposition? Assuming the proposition 'some students of Logic do not know Logic' to be false, state what you can infer about the truth or falsity of its opposites.

5. *Either*, Explain, with concrete illustrations, Conversion and Obversion as modes of Immediate inference. Show why the O proposition cannot be converted and the I proposition cannot be contraposed. 14

Or, Define Moods. Prove by means of syllogistic rules that the conclusion in the Second Figure must be negative.

6. *Either*, Prove the following:— 14

(a) The middle term must be distributed at least once.

(b) No term should be distributed in the conclusion which was not distributed in a premiss.

Or, Show why the Combination IE is an impossible Mood in all the Figures of the Syllogism, while EI is possible in all of them.

7. State any four of the following arguments in their strictly logical forms, and test their validity, mentioning the fallacies (if any) involved in them:— 16

(a) None but the wise are good and none but the good are happy ; therefore none but the wise are happy.

(b) How can you say that he is not a careful examiner when he is severe in examining his papers as careful examiners are known to be.

(c) If he says that he did not tell a lie, why, I ask, did he look abashed, as liars always do?

(d) God created man and man created sin ; therefore God created sin.

(e) The standard of the Calcutta University must be low, since the percentage of success at its examinations is comparatively high ; and it is a well-known fact that the percentage of success is high when the standard is low.

(f) He has got fever, for his skin is hot.

(g) James is upright, for only strict men are upright.

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. *Either*, Explain what is meant by Induction as the *inverse* process of Deduction. What is meant by Plurality of Causes? Is it consistent with a Scientific Conception of Cause? Illustrate your answer by concrete examples. 14

Or, Distinguish between (a) Perfect and Imperfect Induction, (b) Scientific and Popular Induction. Which of these constitutes Induction proper, and why?

2. *Either*, Explain the grounds of Induction, Formal and Material ; and examine the view that the ground of Induction is itself an Induction. 14

Or, 'The cause is the invariable and unconditional antecedent.'

'The Cause is the Sum-total of the Conditions, positive and negative, taken together.'

Explain, with concrete examples, the two statements and determine the relation between Causes and Conditions.

3. *Either*, Show that Observation and Experiment do not differ in kind but only in degree. Enumerate the relative advantages and disadvantages of each. 14

Or, 'Observation and Experiment are aids to elimination.' Explain this statement, and exhibit the scientific importance of elimination. Illustrate in this connexion the fallacies of non-observation as well as mal-observation.

4. *Either*, 'The Method of Concomitant Variations and the Method of Residues are modifications of the Method of Difference.' Explain and illustrate this statement and indicate the cases in which each of these methods is appropriately employed. 14

Or, Explain and illustrate the remark that 'the Method of Agreement is a Method of Discovery, while the Method of Difference is a Method of Proof'. Enumerate the advantages the former has over the latter, and the latter over the former.

5. Name the experimental method on which each of the following arguments is based, stating your reasons in each case:— 14

(a) Intermittent fever is found only in places where there are marshes, even though they differ in every respect.

(b) Despotism gradually disappears as the people are more and more educated.

(c) Able men have generally bad handwriting, while good handwriting is frequently found in men doing comparatively little mental work. Hence it is inferred that mental strain is the cause of poor penmanship.

(d) Both mosquitos and cases of malarial fever have in certain parts of Italy, in West Africa, and elsewhere, become much rarer since these districts have been well drained. Is malarial fever the effect of the presence of mosquitos?

6. *Either*, Explain the importance of Hypothesis in Induction. What are the conditions of a legitimate Hypothesis? Indicate the relation of Hypothesis to Explanation. 14

Or, What is meant by Scientific Explanation? In what sense is Analogy described as incomplete explanation?

7. Test the validity of any four of the following arguments, naming the fallacy (if any), and stating reasons in each case:— 16

(a) The Terror ceased immediately on the death of Robespierre; therefore Robespierre was the cause of the Terror.

(b) States that have grown outrageously luxurious have declined in power. Hence we conclude that luxury was the cause of their downfall.

(c) Wine cannot be injurious to health, for if it had been so, the doctors would not have prescribed it.

(d) Women as a class have not hitherto been equal to men, therefore they are necessarily inferior to men.

(e) Education is clearly the source of all discontent, since the educated, not getting suitable employment, are dissatisfied with their lot.

ELEMENTS OF CIVICS

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FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Answer any SIX questions.

The questions are of equal value.

1. Distinguish between State and Government. In what sense is it true to say that representative government is the best form of government?
2. Describe the rights and privileges of a citizen in a modern state. Are there any obligations to which a citizen is subject?
3. What are the chief agencies that mould public opinion in modern times? Discuss the strength and limitations of these agencies.
4. 'The strict separation of power is not only impracticable as a working principle of government, but it is one not to be desired in practice.' Comment on this statement.
5. Describe the powers and duties of the Secretary of State for India.
6. To what extent have (a) representative government, and (b) responsible government been introduced in this country?
7. Describe briefly the judicial organization in British India.
8. Describe the constitution of the Calcutta Corporation.
9. Estimate the value of local institutions as agencies for the training of the people in the art of self-government. Illustrate your answer from the working of these institutions in Bengal.

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

Answer any SIX questions.

The questions are of equal value.

1. Distinguish between productive and unproductive labour.
'What is of real importance to us to-day is—not whether the labour is productive or unproductive—but whether it is more or less productive, i.e., whether the effort expended results in the production of a large or a small amount of wealth.' Explain.
 2. Critically examine the following statements:—
(a) The best way to benefit a community is to spend one's income.
(b) From the social point of view saving is always better than spending.
 3. What are the various ways by which a typical joint stock company raises its capital?
 4. Discuss the aims and methods of Trade Unions.
 5. Mention the difficulties and inconveniences attending exchange by barter. Show how these difficulties are overcome by the introduction of money.
 6. Trace the development of the co-operative movement in India.
 7. Point out the chief characteristics of India's foreign trade.
 8. 'The Zamindari system is at the root of the poverty of the Bengal peasant.' Do you agree with this statement? Give reasons for your answer.
 9. Discuss briefly the causes of the low level of efficiency of industrial labour in India.
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COMMERCIAL GEOGRAPHY

<i>Paper-setters</i> —	{	MR. MOHITKUMAR GHOSH, M.A., B.COM. (LOND.). DR. HARISCHANDRA SINHA, M.Sc., Ph.D.
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FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

Answer any SIX questions.

All questions are of equal value.

1. Examine the physical conditions that are generally characteristic of world fishing grounds. Illustrate your answer with a few examples.

2. What are the climatic conditions favouring the growth of coffee and tea? What are the principal countries of production and export?
 3. What factors make for the successful development of a river port? Give a few conspicuous examples.
 4. Give a geographical account of the Durham and North Yorkshire iron and steel industry.
 5. Compare and contrast the Mersey and the Clyde basins with special reference to physical features, climate, and occupations.
 6. Show by reference to climate, natural vegetation, and mineral resources, why Manchuria has such important economic possibilities for countries like Russia, Japan, and China.
 7. What do you understand by the hinterland of a port? Illustrate your answers by reference to a few ports in the different parts of the world.
 8. Account for the importance of any *four* of the following:—
(a) Harbin, (b) Warsaw, (c) Minneapolis, (d) Colombo, (e) Chicago, and (f) Manchester.
-

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

Answer the FIRST question and any FIVE of the rest.

The figures in the margin indicate full marks.

1. Describe fully with the help of a sketch-map the distribution of various types of irrigation works in India. 20
 2. Examine the importance of any *four* of the following crops in India:—(a) cotton, (b) ground-nut, (c) jute, (d) linseed, (e) rice, and (f) wheat. 16
 3. Trace the course of the following rivers and mention the geographical circumstances which give importance to them or detract from their value:—(a) Indus, (b) Irawadi, (c) Kaveri, and (d) Mahanadi. 16
 4. Estimate and locate the known mineral resources of India, and give an account of their commercial exploitation. 16
 5. Give an account of the economic geography of the Ganges basin. 16
 6. India has a population of about 320 millions. Analyse the factors which determine the irregular distribution of this vast population. 16
 7. Describe briefly the main imports from Japan into India and exports from India into Japan. 16
 8. Discuss the importance of the following:—(a) Bangalore, (b) Cawnpore, (c) Delhi, (d) Lahore, and (e) Tatanagar. 16
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COMMERCIAL ARITHMETIC AND ELEMENTS OF BOOK-KEEPING

Paper-setters— { MR. G. BASU, B.A., A.C.A.
 ,, RANJIT RAY, M.A., A.C.A., F.R.E.S.

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FIRST PAPER

*Candidates are required to give their answers in their
own words as far as practicable.*

All the questions are of equal value.

1. A man left Rs. 43,600 to each of three sons, aged just 16, 18, and 20 respectively, to accumulate till each should be 23 years old. The share of the eldest was invested in $3\frac{1}{4}$ per cent. G.P. Notes at Rs. $85\frac{1}{14}$, and sold out in proper time at Rs. $87\frac{1}{11}$; that of the second was put out at simple interest at 5 per cent.; whilst that of the youngest was put out at compound interest at 3 per cent. What did each receive when he was 23?

2. If 7 per cent. of the sale price of an article is equal to 8 per cent. of its cost price, and 9 per cent. of the sale price exceeds 10 per cent. of the cost price by half-a-crown, at what price is the article bought and sold?

3. During a sale a shopkeeper reduced his goods 50 per cent. below marked prices, which had originally been fixed to allow 25 per cent. profit on selling price after deducting 10 per cent. discount for cash. What per cent. does he gain or lose?

4. If a bankrupt pays 15s. in the £ on two-thirds of his debts and 14s. in the £ on the rest, he has £2 too little, but if he pays 14s. in the £ on two-thirds of his debts and 15s. in the £ on the rest, he would have £6 left; find his assets.

5. A property changed hands three times, each agent who sold it charging 25s. per cent. as commission. If each time it was sold for the net amount obtained at the previous sale, calculate its original value if the third sale realized £4,622. 4s. 10.05d.

6. Two workmen are engaged on a piece of work for which they are to receive Rs. 27. One workman works for 3 days of 9 hours each, and the other 3 days of 8 hours, but the second does as much in 2 hours as the first does in 3 hours. How should the amount be divided between the two workmen?

7. A trading concern in the first year made a profit of Rs. 23,160 on a turnover of Rs. 4,50,100; and in the second year a loss of Rs. 1,695 was sustained on a turnover of Rs. 3,85,000; while in the third year a profit of Rs. 11,312 was made on a turnover of Rs. 4,12,000. What was the average profit per cent. on the three years' turnover?

8. Find the rate per cent. at which a customer pays interest, in buying the following on credit terms:—'We send a cycle on receipt of 1s. deposit and payment of 1s. per week for 89 weeks, making a total of £4. 10s. 0d. in all, or net price is only £4.'

9. A cubical box, of external dimensions 17 inches each way, would contain crushed ore of the value of £421. 17s. 6d. if it were made of material 1 inch thick ; but by mistake it has been made of thicker material, and the difference in the value of the ore which it will hold is consequently £78. 17s. 6d. What is the real thickness of the material?

10. Which is better, an annuity of £150 to last for 10 years, or the reversion of a freehold estate of £79. 4s. od. per annum, to commence 7 years hence, the rate of interest being 5 per cent.?

11. Is it profitable for a Bombay merchant to buy a Paris Hundi in order to pay a debt of 10,000 francs, when the franc equals 10 as. 6 p. ; or to remit the amount through London, the course of exchange being 1s. 3d. for Re. 1, and 25 francs for £1?

12. Distinguish between *true* and *commercial discount*. A man agrees to pay Rs. 2,000 for the lease of a house dating from June 24th, and to pay for the same on April 21st, subject to a discount of 3 per cent. per annum. How much should he pay, and what is the difference between the *true* and the *commercial discount*?

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

Answer any SIX questions.

All questions carry equal marks.

1. You are instructed by a client to convert his single entry system into one of double entry. How would you proceed? Give entry or entries based on the following statement of assets and liabilities:—

	£	s.	d.		£	s.	d.
Sdy. Creditors	2,146	9	2	Sdy. Debtors	3,596	7	2
Loans	500	0	0	Cash	561	9	2
Bills Payable	1,685	4	9	Stock	1,924	2	8
Bank Loan	500	0	0	Furniture	187	0	0
				Building	2,000	0	0

2. Mr. A and Mr. B are partners and share profits as follows:—

Mr. A seven-tenths and Mr. B three-tenths. Interest on Capital Account only is allowed at 5 per cent. per annum. B is entitled to a salary of £500 a year before the division of profits. Prepare from the following particulars, a statement showing the position of the Capital and of the Drawing accounts of both partners as at 30 June 1933:—

On 1 January 1933 A's Capital Account cr. £5,000; B's Capital Account cr. £2,000; A's Drawing Account cr. £542, and B's Drawing Account cr. £248.

On 1 April A introduces a further £5,000 as capital. The profits for the period, after interest charges and salary were adjusted, was £3,300.

A drew £1,500 on 1 February 1933, and a similar sum on 31 March 1933. B drew on the latter date £1,300 and his salary each month.

3. Compare the differences between hire purchase and payment by instalment. Illustrate, by means of *pro forma* figures, how each method has to be treated in the books of account.

4. Mr. Gee, a retail trader, has three shops. His books show the following particulars at the close of his financial year on 31 March 1933:—

	Calcutta	Bombay	Madras
	£	£	£
Stock, 1 April	2,000	3,000	1,000
Wages . . .	350	250	300
Rent . . .	200	350	250
Sales . . .	5,000	4,000	3,000
Stock, 31 March	2,000	4,000	1,500

His total purchases were £10,500 and general expenses £480. His selling price of goods is fixed by adding to the cost price a fixed percentage which is the same for all branches. His general expenses are borne by each shop in proportion to its turnover. Show the net profits of each shop.

5. From the following figures prepare the Trading and Profit & Loss Account for the year and the Balance Sheet:—

Stock, 1 Jan.	2,000	Capital	5,000
Book Debts	2,000	Creditors	1,000
Plant and Machinery	1,000	Reserve	1,000
Wages	500	Sales	15,000
Salaries	200		
Land and Buildings	3,000		22,000
Travelling Expenses	250		
Purchases	10,000		
Cash	3,050		
	<u>22,000</u>		

Stock on 31 December was £2,500. It was decided to write 10 per cent. off for plant and machinery; to reserve for bad and doubtful debts 10 per cent. of book debts; to place £100 to bonus fund for staff; to place £1,500 to general reserve and to carry the balance forward.

6. *A* drew a bill on *B* for Rs. 800 due three months. *B* accepted the same on 15 January 1933. *A* discounted it with Lloyds Bank on 21 January at 6 per cent. On due date *B* could not pay. On 21 April, *B* gave a fresh bill for one month adding Rs. 25 for cost and interest. Show the entries in *A*'s books.

7. *X* sent 500 articles to his agent *Y* in Madras at an invoice price of Rs. 14-9-6 per article. The following payments were also made in this connexion:—freight and cartage Rs. 318, insurance Rs. 75, miscellaneous Rs. 125. *Y* sold 300 articles at a flat rate of Rs. 28-8-0 and sent an account sales on 30 June showing deductions for storage charges Rs. 50, insurance Rs. 100, and his commission at $7\frac{1}{2}$ per cent. on gross sale proceeds. Show the relative accounts in *X*'s books.

8. Define—*allonge*, *sans recours*, *supra protest*, *usance*, and *cash credit*.

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FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Group A

Answer any THREE questions from this group.

1. (i) If r be the ratio of the roots of the equation $ax^2 + bx + c = 0$, 6
show that $\frac{(r+1)^2}{r} = \frac{b^2}{ac}$.

(ii) Determine the value of m for which $3x^2 + 4mx + 2 = 0$ and 6
 $2x^2 + 3x - 2 = 0$ may have a common root.

2. If x varies as y when z is constant and x varies as z when y is constant, show that x varies as yz when both y and z vary, 6

Apply the principles of variation to find how long 25 men will take to plough 80 acres, if 5 men take 9 days to plough 10 acres of land. 6

3. Find the number of permutations of n things when p of them are a 's ; q , b 's ; r , c 's and the rest different. 6

A library has 5 copies of one book, 4 copies of each of two books, 6 copies of each of three books, and single copies of eight books. In how many ways can all the books be arranged ? 6

4. (i) Find the general term in the expansion of $(1+x)^n$ and obtain the middle term. 6

(ii) Find the term independent of x in the expansion of

$$\left(x^2 + \frac{1}{x}\right)^{12}.$$

5. Prove the exponential theorem. 6

Show that 6

$$e - 1 = 2! + \frac{1}{4!} + \frac{1}{6!} + \dots$$

$$e + 1 = \frac{1}{1!} + \frac{1}{3!} + \frac{1}{5!} + \dots$$

6. (i) Prove that $\log_a m = \log_b m \times \log_a b$ and hence or otherwise deduce that $\log_b a \times \log_c b \times \log_a c = 1$. 6

(ii) Given $\log 104 = 2.017033$, find in how many years Rs. 100 will become Rs. 1000 at 4 per cent. compound interest. Give the answer correct to two places of decimals. 6

GROUP B

Answer any TWO questions from this group.

7. (i) Establish the formula 6

$$\cos(A - B) = \cos A \cos B + \sin A \sin B,$$

where A and B are positive acute angles and $A > B$.

(ii) Prove that

$$(1) \quad (\tan \theta + \sec \theta)^2 = \frac{1 + \sin \theta}{1 - \sin \theta}, \quad 3$$

(2) $\tan A + \tan B + \tan C = \tan A \tan B \tan C$, where A, B, C are the angles of a triangle. 3

8. In any triangle, prove that 4

$$\tan \frac{B - C}{2} = \frac{b - c}{b + c} \cot \frac{A}{2}.$$

If $b = 540$, $c = 420$, and $A = 52^\circ 6'$ find B and C . (Mathematical tables supplied.) 8

9. Draw the graph of $y = \sin x + \cos x$, x lying between 0 and 2π . 8
 Find from the graph the points at which (i) $y = 0$, (ii) y is maximum,
 (iii) y is minimum. 4
10. (i) Prove that 6

$$\tan^{-1} \frac{a-b}{1+ab} + \tan^{-1} \frac{b-c}{1+bc} = \tan^{-1} a - \tan^{-1} c.$$
- (ii) Solve 6
 $\cot x - \tan x = 2.$

GROUP C

Answer any TWO questions from this group.

11. Prove that the locus of the middle points of a system of parallel chords of a parabola is a straight line parallel to the axis. 8
 A parabola being given, find its focus and directrix. 6
12. Prove that the tangents at the ends of a focal chord of an ellipse intersect on the directrix. 8
 Show that the tangents at the extremities of the latus rectum intersect where the major axis meets the directrix. 6
13. Prove that the sum of the focal distances of any point on the ellipse is constant and is equal to the major axis. 6
 If the two foci coincide, show that the ellipse becomes a circle. 4
 Prove also that the major axis is the longest chord that can be drawn in an ellipse. 4
14. (i) Find the equation to the straight line which passes through the point (5, 6) and has intercepts on the axes equal in magnitude but opposite in sign. Find also the coordinates of the point at which the ordinate is double the abscissa. 5+3
- (ii) The parabola $y^2 = 4px$ goes through the point (3, -2). Obtain the length of the latus rectum and the coordinates of the focus of this parabola. 6

GROUP D

Answer ONE question from this group.

15. Prove that the projection of a straight line on a plane is itself a straight line. 6
 Find the length of the projection of a straight line AB on a plane XY in terms of AB and the angle which AB makes with XY . 6
16. (i) Define a *solid* angle and a *dihedral* angle and state how dihedral angles are measured. 6
- (ii) The curved surface of a cylinder is 1,000 sq. cm., and the diameter of the base is 20 cm.; find the volume of the cylinder. Also find its height to the nearest millimetre. 6

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Answer Questions 1 and 9 (starred) and FIVE of the remaining questions. Not more than FOUR questions (including the starred one) from either group may be attempted.

GROUP A

*1. State the conditions necessary for the equilibrium of a body free to move in one plane. To what do these conditions reduce when one point in the body is fixed? 7

Of four co-planar forces in equilibrium, one is given completely, a second and third which are not parallel have their lines of action given, while the fourth has its magnitude given. Prove that the line of action of this fourth force must touch a fixed circle. 8

2. Find the centre of gravity of a uniform elliptic lamina. 7

Five masses of 4, 3, 2, 7, 8 grams respectively are placed on a square table. If their distance from one edge of the table are 2, 4, 6, 8, 10 cm. respectively and from the adjacent edge 3, 5, 7, 9, 21 cm. respectively, find the distances of their centre of mass from the two edges. 7

3. Find the resultant of two like parallel forces P and P' acting on a rigid body. 7

A man carries two weights fastened one at each end of a straight light rod 12 ft. long. If the rod presses on his shoulder with a force of 154 lb. and the point of the rod on his shoulder is 4 ft. from one end, find the weights. 7

4. State the laws of friction and define coefficient of friction and angle of friction. 6

A rectangular table stands on a rough inclined plane and has two sides horizontal; if the coefficient of friction of the two lower feet be μ and that of the two upper feet be μ' , prove that the inclination α of the plane to the horizon when the table is on the point of sliding is given by

$$\tan \alpha = \frac{(\mu + \mu') a}{2a + (\mu' - \mu) c},$$

where $2a$ = distance between the upper and lower feet, and c = distance of the C. G. (supposed to be midway between upper and lower feet) of the table from the inclined plane. 8

5. Define a couple and the moment of a couple. 6

If three forces acting upon a rigid body be represented in magnitude, direction, and line of action by the three sides of a triangle taken in order, they are equivalent to a couple whose moment is represented by twice the area of the triangle. 8

6. Describe a Danish steelyard and explain the method of its graduation. 10

Show that in a Danish steelyard the distances of the marks of graduation from a certain point are in a harmonic progression. 4

GROUP B

7. With the usual notation, prove the formula

7

$$s = ut + \frac{1}{2}at^2.$$

A train stopping at two stations two miles apart takes four minutes on the journey from one of the two stations to the other. Assuming that its motion is first that of uniform acceleration x and then that of uniform retardation y , prove that

$$\frac{1}{x} + \frac{1}{y} = 4,$$

a mile and a minute being units of distance and time respectively. 7

8. State Newton's second law of motion and deduce the formula
- $P = mf$
- . 7

A train, whose mass is 300 tons, moves at the rate of 60 miles per hour; after steam is shut off it is brought to rest by the brakes in 50 yds. Find the force exerted, assuming it to be uniform. 7

*9. Prove that the path of a projectile is a parabola; and that the velocity at any point is that which would be acquired by a particle falling from rest from the directrix of the parabola to that point. Deduce that the latus rectum of the parabola is

$$\frac{2V^2 \cos^2 \alpha}{g},$$

if the particle is projected with a velocity V at an elevation α 10

A particle P is projected at an angle α to the horizon with velocity V and is subsequently met by a second particle Q , which is let fall from rest from the directrix of the path of P at the instant of projection of P . Show that the distance of the point of projection of P from the straight line described by Q is 5

$$\frac{V^2 \cot \alpha}{2g}$$

10. A particle describes a circle of radius
- r
- with uniform speed
- u
- . Find its acceleration. 8

Two masses P and Q are joined by a light inextensible string. The mass P describes a circle of radius 15 ft. on a smooth horizontal table with a uniform speed, while Q is suspended vertically in equilibrium by the string which passes through a small hole in the table at the centre of the circle described by P . If the weights of P and Q are 96 and 125 lb. respectively, find the speed of P . [$g = 32$ ft./sec².] 6

11. Two particles of masses M and m are connected by a light inextensible string which passes over a small smooth fixed pulley. Find the acceleration of the system and the pressure on the pulley. Show that the pressure is less than the sum of the weights of M and m . 8

If in the above case $M = 3m$ and M falls through 40.2 ft. during the third second of its motion from rest, find the value of g . 6

12. Define kinetic energy. Prove that the kinetic energy of a particle of m lb. which has the velocity v ft. per second is $\frac{1}{2}mv^2$ foot-pounds. 8

A heavy particle slides down a smooth inclined plane with an initial velocity u . Assuming that the sum of its kinetic and potential energies is always the same, find the velocity and acceleration of the particle at a distance x from its initial position. 6

PHYSICS

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FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

Attempt not more than SIX questions, of which at least TWO must be from each of the GROUPS A and C and ONE from GROUP B. Neat diagrams should be given wherever necessary and will be taken into consideration in awarding marks. All questions are of equal value.

A

1. State and explain the laws of motion. Show how a definition of force may be derived from the second law.

A force of 100 dynes acts upon a mass of 25 grams for 5 seconds. What velocity does it generate?

2. State, explain, and prove the principle of the parallelogram of forces.

The wind blows from a point intermediate between North and East. The northerly component of its velocity is 5 miles per hour, and the easterly component is 12 miles per hour. Find the total velocity.

3. Explain how you would determine the specific gravity of an insoluble powder by the specific gravity bottle.

A specific gravity bottle weighs 14.72 grams when empty, 39.74 grams when filled with water, and 44.85 grams when filled with a solution of common salt. What is the specific gravity of the solution?

4. Draw a neat diagram of the hydraulic press, and give a brief description of it with an explanation of its action.

5. What is the effect of the pressure of the atmosphere on the weight of a body? Give reasons for your answer, and describe an experiment by which this effect can be demonstrated.

B

6. Explain why a medium is necessary for the propagation of sound, and describe any experiment to prove the statement.

7. State, explain, and prove the laws of the transverse vibrations of strings.

What will be the frequency of the note emitted by a wire 50 cm. in length when stretched by a weight of 25 kilograms, if 2 metres of the wire are found to weigh 4.79 grams?

C

8. Describe any method for measuring temperatures between -200° and $2,000^{\circ}\text{C}$.

9. How do you determine the specific heat of a piece of metal? Mention the precautions that you would take for ensuring correct results.

The densities of two substances are as 2:3 and their specific heats are 0.12 and 0.09 respectively. Compare their thermal capacities per unit volume.

10. How would you determine the maximum pressure of aqueous vapour between 0° and 100°C .

11. Describe Joule's method for determining the mechanical equivalent of heat.

Find the equivalent in ergs of the amount of heat required to raise one kilogram of water through 10°C .

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

Attempt not more than SIX questions, of which at least TWO must be from each of the GROUPS A and C and ONE from GROUP B. Neat diagrams should be given wherever necessary and will be taken into consideration in awarding marks. All questions are of equal value.

A

1. Explain the terms 'standard candle' and 'candle-power'. Show how you can determine the candle-power of a source of light by the photometer.

Two equal sources of light are placed on opposite sides of a screen, one being 20 cm. from it and the other 30 cm. Compare the intensity of illumination on the two sides of the screen.

2. What is meant by the critical angle for a given refracting medium? Show how you would measure it. Hence determine the refractive index of the medium.

What is total reflection and when does it take place?

3. Describe the photographic camera, and explain how you would take a photograph with its help.

4. Explain how you would determine the refractive index of a given glass prism.

Calculate the refractive index of a glass prism for sodium light when the refracting angle of the prism is $45^{\circ} 4'$ and the minimum deviation of a ray of sodium light passing through it is $26^{\circ} 40'$.

$$[\sin 35^{\circ} 52' = 0.586 \text{ and } \sin 22^{\circ} 32' = 0.383.]$$

B

5. How would you prove experimentally that the force of attraction or repulsion between two magnetic poles varies inversely as the square of the distance between them?

6. Obtain the value of the potential at a point due to a single electric charge $+q$ at a distance r from it.

A hollow spherical conductor whose radius is one decimetre is charged with 10 units of electricity. Find the potential (a) at the surface of the sphere, (b) inside it, and (c) at a point 25 cm. from the centre.

7. Describe Wimshurst's influence machine and explain its action.

C

8. Describe a Bunsen's cell and explain its action.

If an incandescent lamp of 80 ohms resistance takes a current of 0.75 ampere, what E.M.F. is required to work it?

9. Define the absolute units of current, potential difference, and resistance, and obtain the practical units from them. Name the instrument by which each is measured and describe any one of them.

10. What is a thermo-electric current? Describe how you would demonstrate its presence. How do you explain the existence of such a current from the principle of conservation of energy?

11. Describe an X-ray bulb and explain how it is worked. Mention some of the properties of the X-rays.

CHEMISTRY

Paper-setters— { Mr. BENIMADHAB CHAKRABARTI, L.M.S., F.C.S.
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 „ RABINDRANATH GUHA, M.A.
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 „ DHIRENDRAMOHAN MUKERJEE, M.Sc.
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 „ DHIRENDRACHANDRA RAY, M.Sc.
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 „ MANINDRANATH SINHA, B.A.

FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

Any SIX questions, of which Question 8 must be one, carry full marks.

The questions are of equal value.

1. Explain, with illustrations, what is meant by (a) an element, (b) a compound, (c) a mixture. Compare and contrast hydrochloric acid gas with a mixture of hydrogen and chlorine in equal volumes.
2. Write a short essay on the periodic classification of elements, noting its usefulness in the development of atomic chemistry.
3. What is 'laughing gas'? How is this gas prepared in a pure condition? What are its properties and uses?
 How would you determine the composition of the various oxides of nitrogen?
4. What are the halogens? Give in tabular form the physical and chemical properties of the halogens to illustrate gradation of properties. How is iodine obtained?

5. What are the compounds of mercury with chlorine? How are they prepared? Describe their properties and uses. How may corrosive sublimate be detected if it is present as an impurity in calomel?

6. Describe fully Marsh's test for the detection of arsenic. What precautions should you take in the performance of this test? How would you distinguish arsenic from antimony by this test?

7. Explain clearly, with examples, the following terms:—
(a) valency, (b) electro-chemical equivalent, (c) catalytic agent, (d) water of crystallization, (e) super-saturated solution.

8. Distinguish between the chemical equivalent and the atomic weight of an element, giving examples. Is there any connexion between the two?

In an experiment, 0.49 gram of a metal when dissolved in hydrochloric acid gave 295 c.c. of dry hydrogen at a temperature of 22° C., and a pressure of 752 mm. of mercury. The specific heat of the metal was found to be 0.152. Calculate the chemical equivalent and the exact atomic weight of the metal.

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Any six questions carry full marks.

All questions are of equal value.

1. How is nitric acid prepared in the laboratory? Do you know of any other method for obtaining nitric acid? How would you obtain (a) nitrous oxide, (b) nitric oxide, and (c) ammonia from it?

2. Describe the preparation of carbon monoxide, and compare it with carbon dioxide. How would you prove that a given volume of carbon dioxide contains twice as much oxygen as is present in an equal volume of carbon monoxide? How is carbon monoxide converted into carbon dioxide, and vice versa?

3. Write what you know about the occurrence, properties, and uses of silica. How is silicon obtained from it? What happens when (a) silica is strongly heated with carbon, (b) chlorine is passed over a strongly heated mixture of silica and carbon?

4. Name the important ores of iron, and briefly describe the usual method of its extraction. What is the difference between wrought iron, cast iron, and steel? What is meant by the rusting of iron?

5. Write what you know about the composition of the following, giving chemical formulae where possible:—(a) bleaching powder, (b) glass, (c) realgar, (d) plaster of Paris, (e) alum, (f) black-lead.

6. Explain, with equations, the chemical reactions involved in the following:—

(a) Burning magnesium is put into a jar containing carbon dioxide gas.

(b) Zinc is placed in an aqueous solution of copper sulphate.

(c) Concentrated sulphuric acid is heated with charcoal.

(d) Red phosphorus is boiled with nitric acid.

(e) Calcium carbide is treated with water.

7. How are the following substances prepared, and what are their uses:—(a) caustic soda, (b) vermilion, (c) coal-gas?

8. Describe an experiment to illustrate the diffusion of gases. State Graham's law of diffusion. The relative rate of diffusion of a gas as compared with carbon dioxide is as 27 is to 29. Calculate the molecular weight of the gas.

9. Under what conditions do the following substances interact with water:—(a) iron, (b) sodium, (c) charcoal, (d) chlorine, (e) sulphur dioxide? What products are formed in each case?

BOTANY

Paper-sellers— { Mr. SURENDRACHANDRA BANERJEE, M.A., B.Sc., F.L.S.
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,, BALACHAND KUNDU, M.Sc.
,, HEMENDRACHANDRA MOOKERJEE, M.Sc.
,, SAILENDRAPRASAD NAG, M.Sc.
,, JYOTISCHANDRA PAL, M.A.
,, MURARIMOCHAN RAYCHAUDHURI, M.Sc.
,, RAMENDRAKRISHNA SARKAR, M.Sc.
,, ALOKKUMAR SEN, M.Sc.

FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

Only FIVE questions are to be attempted.

The figures in the margin indicate full marks.

1. Define the following terms:—(a) dormancy, (b) rhizome, (c) pinna, (d) apocarpous, (e) endocarp. 20
2. What is a thorn? Give reasons for your answer, with an example and sketches. 20
3. What are the veins of a leaf? Write short notes on the chief types of venation. Give sketches and examples. 20
4. State the characters of the natural order Cucurbitaceae. Give sketches and an example. 20

5. How would you distinguish between Liliaceae and Amaryllidaceae? Give an example of each. 20
6. What is a fruit? How are fruits classified? 20
7. How would you classify inflorescences? Write short notes on the simple Racemose inflorescences. Illustrate your answer with diagrams and examples. 20
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SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

Only FIVE questions are to be attempted.

The figures in the margin indicate full marks.

1. What is a cell? Describe briefly the structure and contents of the cell of the stem or root tip. 20
2. What are the tissue-systems? Point out the various tissue-systems in a sketch of longitudinal section of any dicotyledonous stem that you have studied. How does the vascular tissue-system of a stem differ from that of a root? 20
3. Describe briefly the process of carbon assimilation by green plants. Enumerate and discuss the conditions required for the normal performance of the function. 20
4. How does an *Agaricus* differ from a *Mucor* in respect of the complexity of vegetative structure and the production of spores? 20
5. Describe the mode of reproduction in *Spirogyra*. 20
6. What is transpiration? How does it affect the absorption of food-materials from the soil? 20
7. What is geotropism? Describe, in detail, a geotropic curvature. 20
-

PHYSIOLOGY

Paper-setters— { DR. GIRINDRASEKHAR BOSE, D.Sc. M.B.
PROF. SUBODHCHANDRA MAHALANOBIS, B.Sc., F.R.S.E.

Examiners— { MR. PARIMALBIKAS SEN, M.Sc.
,, SUNILCHANDRA SEN, M.Sc.

FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

Answer any SIX questions.

All questions are of equal value.

1. Give a brief account of the physical peculiarities and chemical nature of protoplasm.
 2. What are joints and ligaments? Describe the elbow joint and the way in which it works.
 3. Describe the histological structure of a long bone.
 4. Describe the microscopic appearance of a striated muscle fibre.
 5. Describe the phenomenon of muscular contraction.
 6. How is the erect position maintained in man?
 7. What do you know about the clotting of blood?
 8. What do you understand by the expression 'circulation of blood'? Mention the proofs of the circulation of blood.
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SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

Answer any SIX questions.

All questions are of equal value.

1. Describe the influence of respiration on circulation.
 2. Describe the exchange of gases between the blood and air.
 3. Mention the different types of food and the importance of each in maintaining nutrition.
 4. What are the effects of over-eating?
 5. Describe the functions of the pancreas.
 6. How is the urine secreted by the kidneys?
 7. Briefly describe the structure of nerve cells, axons, and dendrons with the help of a diagram.
 8. Give a diagram of a section through the eye, showing the different structures.
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ZOOLOGY.

Paper-setters— { DR. HIMADRIKUMAR MUKHERJEE, D.Sc.
 „ H. S. PURETHI, D.Sc.

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 „ PURNENDUNATH CHAUDHURI, B.Sc., M.B.

FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

Attempt any FOUR questions.

Illustrate your answers with diagrams as far as possible.

The figures in the margin indicate full marks.

1. What are the essential characters and contents of an animal cell? 25
 2. Describe the structure and life-history of Paramoecium. 25
 3. Describe the structure of the body wall of Hydra. 25
 4. Describe the generative organs of leech. 25
 5. Give the general characters of Arthropoda, and mention the leading subdivisions, with an example of each. 25
 6. Compare the nervous system of a fresh-water mussel with that of a snail. 25
-

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

Attempt any FOUR questions.

Illustrate your answers with diagrams as far as possible.

The figures in the margin indicate full marks.

1. Describe the respiratory system of Amphioxus. 25
 2. Enumerate the cranial nerves of Bekli. 25
 3. Describe the mechanism of circulation through the heart of frog. 25
 4. Describe the pectoral-girdle of pigeon. 25
 5. Give the general characters of Mammalia. 25
 6. Describe the digestive system of rabbit. 25
-

GEOGRAPHY

Paper-setters— { Mr. SARATLAL BISWAS, M.A.
 „ SARATCHANDRA MAJUMDAR, M.A., F.R.C.S.

Examiners— { Mr. SANTOSHKUMAR RAY, M.Sc.
 „ KUMUDCHANDRA RAYCHAUDHURI, M.A.

FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Answer SIX questions only, of which Question 1 must be one.

1. The mean monthly temperature and rainfall (in inches) of two of the cities of India (including Burmah and Ceylon) are given below:— 20

I

	J.	F.	M.	A.	My.	J.	Jl.	A.	S.	O.	N.	D.
Temp. (°F.)—	79	79	81	81	82	80	80	81	80	79	79	79
Rainfall—	3	2	5	11	12	8	5	4	5	14	12	6

II

Temp. (°F.)—	39	41	51	59	66	70	64	63	61	57	50	43
Rainfall—	3	3	3	2	4	8	18	18	6	1	4	3

Represent the above data by graphs and suggest the names of the two cities, giving reasons for your suggestion.

2. Explain clearly how to distinguish between—(a) a mean solar day and a sidereal day, (b) absolute humidity and relative humidity. 16

3. Find out the latitude and longitude of a place where the meridian altitude of the sun on 21 December is 43.5° at 6.6 a.m. (Greenwich time).

Explain clearly the methods you use.

4. What do you mean by the term map-projection? How do the chief difficulties of map-making arise? Name *four* different types of map-projection, and indicate, giving reasons, the purpose for which each of them is used. 16

5. Give the distribution and the characteristics of the 'Mediterranean type of climate'. Analyse the factors which bring about such climate in each of the localities you mention. 16

6. Describe the processes of weathering and erosion and the changes effected by them on the earth's surface. 16

7. Write short notes on the following:—continental shelf, bore, rift valley, and great circle sailing. 16

8. Define the term 'monsoon'. Describe the nature of the monsoons of India, China, and Australia. 16

9. Discuss the effects of climate on—(a) localization of manufactures, (b) architecture, (c) trade routes. 16

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Answer SIX questions only, of which Question 1 must be one.

1. Write an account of the geography *either* of your home district, *or* of any place you know, *or* of an area in which you have spent a holiday. You should describe physical features, climate, rainfall, natural vegetation, cultivated crops, industries, distribution of population, and historical associations. The descriptions should be illustrated by maps. 20
 2. Give a brief account of the situation, the character, the cause, and the economic importance of the grasslands of North America. 16
 3. 'Britain and Russia are admirably suited for trading with each other; each country has a superabundance of articles the other requires.' Discuss this statement. 16
 4. How far are the routes of Indian railways controlled by the relief of the land? To what extent has the commerce of India with the outside world developed on account of these railways? Illustrate your answer with reference to the chief cities of India which are on the railway routes. 16
 5. Compare and contrast Australia with parts of South America and Africa which lie within the same latitude. 16
 6. In what parts of the world are the following produced on a large scale:—cotton, wheat, coffee, rubber, and sugar? What geographical and other factors have made the areas you mention suitable for the large-scale production of these articles? 16
 7. State the geographical and other factors which have led to the growth and importance of the following:—Karachi, Quetta, Canton, Aleppo, Munich, Valparaiso, Melbourne, and Winnipeg? 16
 8. What do you mean by 'tundra'? Where does it occur? Give a short account of the tundra-dwellers and their surroundings during winter and summer. 16
 9. Draw an outline-map of Africa marking *four* important rivers and *four* important lakes. What are the most striking features of the relief of Africa? 16
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B. A. Examination

1934

ENGLISH

<i>Paper-setters—</i> <i>(Pass and Honours)</i>	{	Mr. JYOTISHCHANDRA BANERJEE, M.A.
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		„ AMARNATH JHA, M.A.
		MR. BIJAYGOPAL MOOKERJEE, M.A.
		DR. HARENDRACOOMAR MOOKERJEE, M.A., Ph.D.
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		SIR A. SUHRAWARDY, Kt., M.A., Ph.D., D.Lit.,
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		„ A. H. HARLEY, M.A.

FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Explain, writing notes on points of interest, any *four* of the following:—

40

(a) What is honour? a word. What is in that word, honour? What is that honour? air. A trim reckoning!—Who hath it? he that died o' Wednesday. Doth he feel it? no. Doth he hear it? no. Is it insensible, then? yea, to the dead. But will it not live with the living? no. Why? detraction will not suffer it:—therefore I'll none of it.

(b) In faith, he is a worthy gentleman;
Exceedingly well read, and profited
In strange concealments; valiant as a lion,
And wondrous affable; and as bountiful
As mines of India.

(c) He must be taught, and train'd, and bid go forth:—
A barren-spirited fellow; one that feeds
On abject orts and imitations,
Which, out of use and stal'd by other men,
Begin his fashion: do not talk of him
But as a property.

- (d) By the gods,
 You shall digest the venom of your spleen
 Though it do split you ; for from this day forth
 I'll use you for my mirth, yea, for my laughter,
 When you are waspish.
- (e) Sometimes he angers me
 With telling me of the moldwarp and the ant,
 Of the dreamer Merlin and his prophecies,
 And of a dragon and a finless fish,
 A clip-wing'd griffin and a moulten raven,
 A couching lion, and a ramping cat,
 And such a deal of skimble-skamble stuff
 As puts me from my faith.
- (f) Where she will'd, her spirit went ;
 Whether to faint Elysium, or where
 Down through tress-lifting waves the Nereids fair
 Wind into Thetis' bower by many a pearly stair ;
 Or where God Bacchus drains his cups divine,
 Stretch'd out, at ease, beneath a glutinous pine.

2. *Either*, Discuss Keats's theory of Beauty, illustrating your answer by reference to the poems you have read. 15

Or, What is meant by the remark that Keats was an Elizabethan born out of his due time? What Elizabethan influences can you trace in his poems?

3. *Either*, 'Tennyson was a typical Victorian.' Discuss. 15

Or, Examine the statement that Tennyson had only artifice, but no art.

4. *Either*, Can you gather from *Julius Caesar* Shakespeare's attitude towards democracy? 16

Or, 'Shakespeare's tragedies imply some clash of ideals.' Discuss this with reference to *Julius Caesar*.

5. *Either*, Write a character-sketch of Falstaff. Refer, if you can, to the other plays in which he figures. 14

Or, Write a note on Shakespeare's treatment of history, with special reference to *Henry IV*, Part I.

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. *Either*, Point out the salient features of Burke's prose style, and discuss the following statement:—'The florid style is a mixture of affectation and common-place. Burke's was a union of untameable vigour and originality.'

Or, Illustrate the following from your text:—'Burke 'made himself everywhere the champion of a principle and the persecutor of a vice ; and men saw him bring to the attack all the forces of his wonderful knowledge, his lofty reason, his splendid style, with the unwearying and untempered ardour of a moralist and a knight.'

2. Explain, with reference to the context, any *two* of the following passages:— 16

(a) This moral levelling is a *servile principle*. It leads to practical passive obedience far better than all the doctrines which the pliant accommodation of theology to power has ever produced. It cuts up by the roots not only all idea of civil resistance, but even of civil opposition.

(b) Frenzy does not become a slighter distemper on account of the number of those who may be infected with it. Delusion and weakness produce not one mischief the less, because they are universal.

(c) A conscientious man would be cautious how he dealt in blood. He would feel some apprehension at being called to a tremendous account for engaging in so deep a play, without any sort of knowledge of the game.

(d) You might have sat, like Darby and Joan, and flattered each other. I want my wings, and to use them, sir.

3. *Either*, How does Lafcadio Hearn sum up his view regarding *The Genius of Japanese Civilization*? In this connexion, fully bring out the idea contained in the following:—'Generally speaking, we construct for endurance, the Japanese for impermanency.' 16

Or, Briefly summarize Hazlitt's views on the *Ignorance of the Learned*.

4. Explain, with reference to the context, any *two* of the following passages:— 16

(a) They were always in their first garden, reaping harvests of their golden time, among their *Flori* and their *Spici-legia*; . . . The Greek and Latin, their stately Pamela and their Philoclea, with the occasional duncery of some untoward tyro, serving for a refreshing interlude of a Mopsa or a clown Damoetas.

(b) A little song of Shakespeare or of Goethe is pure art; it is exquisitely beautiful, although its intellectual content may be nothing. . . . A series of pictures is made to pass before your mind by the meaning of words, and the effect is a melody of ideas.

(c) Men must either hereafter live, or hereafter die; fate may be bravely met, and conduct wisely ordered, on either expectation; but never in hesitation between ungrasped hope, and unfronted fear.

(d) For honest Tom's heart was under such excellent control, that Venus herself without a portion would never have caused it to flutter.

5. *Either*, Discuss the following statement:—'If that is the greatest historical novel in which men and women most recognizably think the thoughts, speak the speech, do the acts of a past generation; in which the style of the writing is most perfect, not only intrinsically, but also in its keeping with the events narrated and the language in use at the time; in which the past is evoked by means that seem most simple, and give no impression of the enormous labour involved;—there is nothing in the English language to place, in this particular line, beside *Esmond*.' 18

Or, 'The masterpiece of the work (*Esmond*) is the character of *Esmond*.' Justify this statement.

6. *Either*, Illustrate, by a reference to some of the more important events in Job's life, the truth of the poet's line,—'*Pray and stay*—are two blessed monosyllables.' 18

Or, Illustrate, by particular references, the following:—'It (the *Book of Psalms*) is at once a manual of devotion, a book of hymns and spiritual songs, and a collection of private and public prayers.'

THIRD PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Write an essay on *one* of the following subjects:— 50
 - (a) 'The golden age, which a blind tradition has hitherto placed in the past, is before us' (CARLYLE).
 - (b) The place of literature in education.
 - (c) The influence of Western thought on Bengali literature.
 - (d) The sense of tears in mortal things.
2. Give the substance of *one* of the following:— 25
 - (a) *Wolsey*. Farewell! A long farewell to all my greatness!
 This is the state of man: to-day he puts forth
 The tender leaves of hopes; to-morrow blossoms,
 And bears his blushing honours thick upon him;
 The third day comes a frost, a killing frost,
 And—when he thinks, good easy man, full surely
 His greatness is a-ripening—nips his root,
 And then he falls, as I do. I have ventur'd,
 Like little wanton boys that swim on bladders,
 This many summers in a sea of glory,
 But far beyond my depth; my high-blown pride
 At length broke under me, and now has left me,
 Weary and old with service, to the mercy
 Of a rude stream, that must for ever hide me.
 Vain pomp and glory of this world, I hate ye!
 I feel my heart new open'd. O, how wretched
 Is that poor man that hangs on princes' favours!
 There is, betwixt that smile we would aspire to,
 That sweet aspect of princes, and their ruin,
 More pangs and fears than wars or women have;
 And when he falls, he falls like Lucifer,
 Never to hope again.
 - (b) *The Sea-Limits*. 25
 Consider the sea's listless chime:
 Time's self it is, made audible,—
 The murmur of the earth's own shell.
 Secret continuance sublime
 Is the sea's end: our sight may pass
 No furlong further. Since time was,
 This sound hath told the lapse of time.
 No quiet, which is death's,—it hath
 The mournfulness of ancient life,
 Enduring always at dull strife.
 As the world's heart of rest and wrath,
 Its painful pulse is in the sands.
 Last utterly, the whole sky stands,
 Grey and not known, along its path.
 Listen alone beside the sea,
 Listen alone among the woods;
 Those voices of twin solitudes
 Shall have one sound alike to thee:
 Hark where the murmurs of thronged men
 Surge and sink back and surge again,—
 Still the one voice of wave and tree.

Gather a shell from the strown beach
 And listen at its lips: they sigh
 The same desire and mystery,
 The echo of the whole sea's speech.
 And all mankind is thus at heart
 Not anything but what thou art:
 And Earth, Sea, Man, are all in each.

3. Reproduce in your own words the spirit of *one* of the following passages:— 25

(a) A foolish consistency is the hobgoblin of little minds, adored by little statesmen and philosophers and divines. With consistency a great soul has simply nothing to do. He may as well concern himself with his shadow on the wall. Speak what you think now in hard words, and to-morrow speak what to-morrow thinks in hard words again, though it contradict everything you said to-day.—'Ah, so you shall be sure to be misunderstood.'—Is it so bad, then, to be misunderstood? Pythagoras was misunderstood, and Socrates, and Jesus, and Luther, and Copernicus, and Galileo, and Newton, and every pure and wise spirit that ever took flesh. To be great is to be misunderstood.

I suppose no man can violate his nature. All the sallies of his will are rounded by the law of his being, as the inequalities of Andes and Himmaleh are insignificant in the curve of the sphere. Nor does it matter how you gauge and try him. A character is like an acrostic or Alexandrian stanza; read it forward, backward, or across, it still spells the same thing. . . .

There will be an agreement in whatever variety of actions, so they be each honest and natural in their hour. For of one will the actions be harmonious, however unlike they seem. These varieties are lost sight of at a little distance, at a little height of thought. One tendency unites them all. The voyage of the best ship is a zigzag line of a hundred tacks. See the line from a sufficient distance, and it straightens itself to the average tendency. Your genuine action will explain itself, and will explain your other genuine actions. Your conformity explains nothing. Act singly, and what you have already done singly will justify you now. Greatness appeals to the future. If I can be firm enough to-day to do right and scorn eyes, I must have done so much right before as to defend me now. Be it how it will, do right now. Always scorn appearances, and you always may. The force of character is cumulative. All the foregone days of virtue work their health into this. What makes the majesty of the heroes of the senate and the field, which so fills the imagination? The consciousness of a train of great days and victories behind. They shed a united light on the advancing actor.

(b) In the currency of the soul, as in that of states, spurious coin drives out good. Its stamp is different in different generations, but in our own it is familiar. The chief enemy of the life of the spirit, whether in art, culture, and religion, or in the simple human associations which are the common vehicle of its revelation to ordinary men, is itself a religion. It is, as everyone knows, the idolatry of wealth, with its worship of pecuniary success and its reverence for the arts, however trivial or unamiable in themselves, by which success is achieved, and its strong sense of the sanctity of possessions and weak sense of the dignity of human beings, and its consequent emphasis, not on the common interests which unite men, but on the accidents of property, and circumstance, and economic condition, which separate and divide them. The cult has strange antics of devotion, and singular observances, and a ritual sometimes comic, sometimes cruel, sometimes both. It causes its devotees to admire what is not admirable, while despising what is, and to seek happiness where it cannot be found, not where it can. It is not favourable to

simplicity of life, for it makes much of display ; or to sincerity of mind, for it burns incense to shams; or to a just and sensitive taste, for its criteria are those of quantity and mass ; or to harmonious relations between human beings, for it labours hard, and with success, to multiply discords. But with all its crudities and extravagances, the creed rests on a reality. It draws its strength from the truth that, as the world is to-day, wealth opens the gates of opportunity, and poverty, save for fortunate exceptions, still commonly closes them.

So it is not sufficient to exorcize the demon with pious conjurations. It is necessary to destroy the hard pediment of fact, on which his power reposes. Though the ideal of an equal distribution of material wealth may continue to elude us, it is necessary, nevertheless, to make haste towards it, not because such wealth is the most important of man's treasures, but to prove that it is not. . . . It is possible that the ultimate goods of human life, which belong to the realm where to divide is not to take away, may more easily be attained when its instruments and means are less greedily grasped and more freely shared.

FOURTH PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. *Either*, Write a note on the madness of Hamlet. 15
Or, Comment on Shakespeare's use of humour in *Hamlet*.
2. *Either*, With which of the following two opinions do you agree, or do you find truth in both?— 14
 (a) 'The versification of the choruses in *Samson Agonistes* is so harsh and dissonant as scarce to preserve any appearance of regularity.'
 (b) 'The *Samson Agonistes* is the most masterly piece of English versification.'
 Give reasons for your answer.
- Or*, Do you consider the autobiographical element in *Samson Agonistes* a defect or a merit? To what extent does it interfere with the Greek spirit which Milton was striving to attain in this work?
3. *Either*, Compare and contrast *St. Cecilia's Day* with *Alexander's Feast*. Which of the two do you prefer, and why? The latter has been characterized as 'nothing more than a rhetorical masterpiece'. Is this a just criticism? 14
Or, 'Dryden was a bolder and more varied versifier than Pope. He was a more vigorous thinker . . . and had more of what may be called strength of mind than Pope; but he had not the same refinement and delicacy of feeling.' Discuss the above, illustrating your answer by references to your text.
4. *Either*, Why has Tennyson's *Crossing the Bar* been called 'the most perfect of his shorter poems'? Can you explain why he requested his son to put it at the end in all editions of his poems? Compare it with Browning's *Prospice*. Do the differences suggest characteristic differences between the poets? 14
Or, Write a critical appreciation of either of the following poems:—
 (a) *The Blessed Damozel*, (b) *The Scholar-Gipsy*.

5. Annotate with reference to the context any *three* of the following:—

18

(a) *Ham*. How chances it they travel? their residence, both in reputation and profit, was better both ways.

Ros. I think their inhibition comes by the means of the late innovation.

- (b) Fame, if not double-faced, is double-mouthed,
And with contrary blast proclaims most deeds ;
On both his wings, one black, the other white,
Bears greatest names in his wild aery flight.
- (c) Great Fletcher never treads in buskins here,
Nor greater Jonson dares in socks appear ;
But gentle Simkin just reception finds
Amidst this monument of vanisht minds
Pure clinches the suburban muse affords
And Panton waging harmless war with words.
- (d) This the blest Lover shall for Venus take,
And send up vows from Rosamonda's lake ;
This Partridge soon shall view in cloudless skies,
When next he looks thro' Galitaeo's eyes ;
And hence the egregious wizard shall foredoom
The fate of Louis and the fall of Rome.
- (e) Sophocles long ago
Heard it on the Aegean, and it brought
Into his mind the turbid ebb and flow
Of human misery ; we
Find also in the sound a thought
Hearing it by this distant northern sea.

6. Elucidate the meaning of *one* of the following, pointing out its literary merits ; and state your opinion regarding the views expressed in it:—

25

- (a) I have seen
A curious child, who dwelt upon a tract
Of inland ground, applying to his ear
The convolutions of a smooth-lipped shell ;
To which, in silence hushed, his very soul
Listened intensely ; and his countenance soon
Brightened with joy, for from within were heard
Murmurings, whereby the monitor expressed
Mysterious union with its native sea.
Even such a shell the universe itself
Is to the ear of Faith ; and there are times,
I doubt not, when to you it doth impart
Authentic tidings of invisible things ;
Of ebb and flow, and ever-during power ;
And central peace, subsisting at the heart
Of endless agitation.

- (b) The hollow sea-shell which for years hath stood
On dusty shelves, when held against the ear
Proclaims its stormy parent ; and we hear
The faint far murmur of the breaking flood.
We hear the sea. The sea? It is the blood
In our veins, impetuous and near,
And pulses keeping pace with hope and fear
And with our feelings' ever-shifting mood.

Lo! in my heart I hear, as in' a shell,
 The murmur of a world beyond the grave,
 Distinct, distinct, though faint and far it be.
 Thou fool! this echo is a cheat as well,—
 The hum of earthly instincts; and we crave
 A world unreal as the shell-heard sea.

FIFTH PAPER

*Candidates are required to give their answers in their
 own words as far as practicable.*

The figures in the margin indicate full marks.

1. Explain, with reference to the context, *three* of the following passages:— 21

(a) Thus it appears that even what is supernatural need not be liberal, nor need a hero be a gentleman, for the plain reason that one idea is not another idea. And in like manner the Baconian philosophy, by using its physical sciences in the service of man, does thereby transfer them from the order of liberal pursuits to the distinct class of the useful.

(b) Public revenges are for the most part fortunate; as that for the death of Caesar; for the death of Pertinax; for the death of Henry III of France; and many more. But in private revenges it is not so; nay, rather vindictive persons live the life of witches, who, as they are mischievous, so end they unfortunate.

(c) A poet is not a man of two gifts, a gift for experience and a gift for translating experience into words: he is a man for whom words are in a peculiar degree evocative of experience and experience of words, a man whose nature it is to realize his own experience and enter into it verbally.

(d) Celsus could never have spoken it as a physician, had he not been a wise man withal, when he giveth it for one of the great precepts of health and lasting, that a man do vary and interchange contraries, but with an inclination to the more benign extreme; . . . so shall nature be cherished and yet taught masteries.

(e) We dimly see within our intellectual nature a miniature, as it were, of our entire self, yet deprived of all that we condemn or despise, the ideal prototype of everything excellent or lovely that we are capable of conceiving as belonging to the nature of man. Not only the portrait of our external being, but an assemblage of the minutest particles of which our nature is composed.

2. *Either*, How does a Baconian Essay differ from an Essay of the present day? 18

Or, Illustrate from your study of Bacon's *Essays* his wide humanism and his shrewd practical sense.

3. Answer *two* of the following:— 18 + 18

(a) 'The essayist is the opposite of the romancer, because his one and continuous aim is to keep the homely materials in view, to face actual conditions, not to fly from them.' Amplify this statement of Benson's in the light of your study of *Several Essays*.

(b) Write a short essay on the *Art* of English Prose, basing yourself on *The Times Literary Supplement Review*, and illustrating your ideas from the work of the great prose-writers you have read.

(c) Bring out the ideas on literature expressed in the essays of De Quincey and Matthew Arnold included in Cumberlege, indicating whether you agree with them.

4. Give the substance of *one* of the following passages:— 25

(a) History does not record everything which lives and exists ; it only knows of that portion which interferes immediately with material events ; thus it arrives at the fiction of the relief of one epoch by the succeeding one. In truth, they all continue to exist in and with another. Just as no state in the individual literally passes away, but only disappears from the scene of activity, so historical conditions endure, although they no longer affect the movement of the world. I know circles in which the eighteenth century still continues, provinces in which, even to-day, the spirit of the Reformation period dominates. I am sure there are still Chaldeans, Sumerians, Phoenicians ; only it is difficult to discover them. This world is filled by ghosts. And they are abroad most noisily where their existence is denied most definitely. Whence the multiplicity of the modern man who thinks historically, his dissatisfaction, his enmity to his own world? He wants to be different from what he is ; he wants to fit himself into an intellectual structure by violence. In his superstitious belief in himself as a historical unit, he endeavours to silence that within himself which does not harmonize with his age.

(b) To every one of us the world was once as fresh and as new as to Adam. And then, long before we were susceptible of any other mode of instruction, Nature took us in hand, and every minute of waking life brought its educational influence, shaping our actions into rough accordance with Nature's laws, so that we might not be ended untimely by too gross disobedience. Nor should I speak of this process of education as past for any one, be he as old as he may. For every man the world is as fresh as it was at the first day, and as full of untold novelties for him who has the eyes to see them. . . . Thus the question of compulsory education is settled so far as Nature is concerned. Her bill on the subject was framed and passed, long ago. But like all compulsory legislation, that of Nature is harsh and watesful in its operation. Ignorance is visited as sharply as wilful disobedience—incapacity meets with the same punishment as crime. The object of what we commonly call education is to make good these defects in Nature's methods ; to prepare the child to receive Nature's education, neither incapably nor ignorantly, nor with wilful disobedience. All artificial education ought to be an anticipation of natural education. And a liberal education is an artificial education which has not only prepared a man to escape the great evils of disobedience to natural laws, but has trained him to appreciate and to seize upon the rewards, which Nature scatters with as free a hand as her penalties.

SIXTH PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

PART I

Answer Question 7 and two others from this part.

1. Write notes on *one* of the following:—(a) the Teutonic spirit in Old English literature; (b) 'The Matter of Britain'; (c) Early English ballads; (d) Elizabethan lyric poetry; (e) 'Classical' and 'Romantic'; (f) the Artificial Epic. 16
2. Indicate the position of King Alfred in the history of Old English literature and culture. 16
3. 'Chaucer belongs more to France and the continent than to his own England.' Discuss, with reference to the literary achievement of Chaucer. 16
4. Give a short history of the English drama from its beginnings to the death of Marlowe. 16
5. Write an account of the works of the more important English poets of the second half of the eighteenth century. 16
6. Write a brief critical appreciation of *one* of the following English writers:—Milton, Scott, Shelley, Dickens, Tennyson. 16
7. Write notes on *three* of the following:—*Ancrene Riwe*; *Euphues*; *The First Folio Edition of Shakespeare*; *the Authorized and the Revised Versions of the Bible*; Macpherson's *Ossian*; Johnson's *English Dictionary*; *The Beggar's Opera*; *Hyperion*; *Imaginary Conversations*; Carlyle's *French Revolution*; *Sohrab and Rustum*; *Lalla Rookh*. 18

PART II

Answer Question 6 and two others from this part.

1. Write a short note on the origin and early history of the English language, mentioning the general characteristics of the family to which it belongs. 16
2. Estimate the nature and extent of the Scandinavian element in English, contrasting it with the French element. 16
3. 'English is more masculine than most languages.' Explain this clearly, following Jespersen. 16
4. Write notes on *two* of the following:—(a) hybrids; (b) compounds in Modern English; (c) the formation of the genitive in Modern English; (d) 'Journalese'; (e) the tenses of the verb in Modern English. 16
5. Write a short essay on the kind of language used in Modern English poetry. 16
6. Write philological or other notes on *six* of the following words:—*thou* and *you*; *alms*; *trusteeship*; *bankrupt*; *bush*; *church*; *egg*; *Jehu*; *Mrs. Grundy*; *kitchen*; *cheap*; *heathen*; *gospel*; *nostril*; *puny*; *admiral*; *vinolia*; *navvy*.

ENGLISH—PASS

Chairman—PROF. JNANRANJAN BANERJEA, M.A., B. L.

FIRST PAPER

Examiners:—	{	Mr. AMULYACHANDRA AIKAT, M.A.
		„ BATUKNATH BHATTACHARYYA, M.A.
		„ ABINASCHANDRA BOSE, M.A.
		„ NALINIMOHAN CHATTERJEE, M.A.
		„ SOMESWARPRASAD MOOKERJEE, M.A.
		„ SURESCHANDRA RAY, M.A.
		„ AMIYAKUMAR SEN, M.A.
		„ SUESCHANDRA SENGUPTA, M.A.
		„ ANANDAKRISHNA SINHA, M.A.
		„ JITESCHANDRA GUHA, M.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. *Either*, Point out the main deviations from history in *Julius Caesar* and *King Henry the Fourth, Part I*, and indicate the dramatic purposes served by them. 16

Or, 'The relation of husband and wife, as conceived in the historical plays, differs throughout from that relation as conceived in the tragedies.' Discuss this statement, with special reference to the scene between Hotspur and Lady Percy, and that between Brutus and Portia. 16

2. *Either*, Consider the opinions of Cæsar and Brutus about Cassius, and give your own estimate of his character. 16

Or, Brutus is 'a Stoic by profession and in reality the reverse—acting deeds against his nature by the strong force of principle and will'. Discuss. 16

3. *Either*, Compare the characters of Hotspur and Prince Henry. 16

Or, Discuss the character of Falstaff. 16

4. *Either*, Narrate the story of *Muleykeh*, and explain the following remark:—'The narrative leads up to a supreme moment, and this resolves itself through a paradox of the heart.' 16

Or, Write a critical estimate of *Michael* as a narrative poem, and add a short note on its style. 16

5. Explain any *four* of the following:— 36

(a) For every fiery prophet in old times,
And all the sacred madness of the bard,
When God made music thro' them, could but speak
His music by the framework and the chord;
And as ye saw it ye have spoken truth.

(b) And Cæsar's spirit, ranging for revenge,
With Ate by his side come hot from hell,
Shall in these confines with a monarch's voice
Cry 'Havoc', and let slip the dogs of war;
That this foul deed shall smell above the earth
With carrion men, groaning for burial.

- (c) All furnish'd, all in arms ;
 All plum'd like estridges that wing the wind ;
 Baited like eagles having lately bath'd ;
 Glittering in golden coats, like images.
- (d) Be angry when you will, it shall have scope ;
 Do what you will, dishonour shall be humour.
 O Cassius, you are yoked with a lamb
 That carries anger as the flint bears fire ;
 Who, much enforced, shows a hasty spark,
 And straight is cold again.
- And, for the sage,
 (e) Let spear-grass and the spiteful thistle wage
 War on his temples. Do not all charms fly
 At the mere touch of cold philosophy?

Philosophy will clip an Angel's wings,
 Conquer all mysteries by rule and line.

- (f) I am joined with no foot-land-rakers, no long-staff sixpenny strikers, none of these mad mustachio-purple-hued malt-worms ; but with great oneyers, such as can drink sooner than pray ; and yet, Zounds, I lie ; for they pray continually to their saint, the common-wealth ; or rather . . . prey on her, for they ride up and down on her and make her their boots.

SECOND PAPER

REV. J. N. RAWSON, B.Sc., B.D.
 REV. G. H. C. ANGUS, M.A., B.D.
 MR. GIRIJASANKAR BHATTACHARYYA, M.A.
 „ MANJUGOPAL BHATTACHARYYA, M.A.
 „ JITENDRANATH CHAKRABARTI, M.A.
 „ NARENDRANATH CHATTERJEE, M.A.
 „ GOPALCHANDRA MAITRA, M.A.
 „ CHANDICHARAN MITRA, M.A.
 „ JYOTISHCHANDRA MITRA, M.A.
 „ ARTHUR MOWAT, M.A.
 „ SUHASCHANDRA RAY, M.A.

Examiners:—

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. *Either*, Illustrate from your text the truth of Matthew Arnold's remark that 'Burke is so great because, almost alone in England, he brings thought to bear upon politics, he saturates politics with thought'. 18

Or, How does Burke define (a) civil freedom, (b) the true end of legislature?

Or, Reproduce Burke's observations against the partial suspension of the Habeas Corpus Act.

2. Explain any *three* of the following, taking at least *one* from each group:—

30

GROUP A

(a) We behold our native land . . . deficient to her allies ; lofty to her subjects, and submissive to her enemies ; and three millions of the subjects of Great Britain are seeking for protection to English privileges in the arms of France.

(b) The general opinion is the vehicle and organ of legislative omnipotence.

(c) But nothing in progression can rest on its original plan. We may as well think of rocking a grown man in the cradle of an infant.

GROUP B

(a) It is a just though trite observation that victorious Rome was herself subdued by the Arts of Greece.

(b) Next to being right in this world, the best of all things is to be clearly and definitely wrong.

(c) Falstaff has done an immense deal to alleviate misery and promote positive happiness. What more can be said of your heroes and philanthropists?

3. *Either*, Amplify and explain Lamb's remark about 'the fine old race of Pedagogues'--'They were always in their first garden, reaping harvests of their golden time, among their *Flori* and their *Spicilegia*, in Arcadia still, but kings.' 18

Or, How does Ruskin bring out the difficulty of addressing an audience without knowing whether they believed or did not believe in any other world than this? Explain the significance of the title 'Crown of Wild Olive' used by Ruskin.

Or, Give some account of the splendour and magnificence of the Roman Empire in the age of the Antonines.

Or, What glimpses of domestic life and of religious belief of the Japanese do we get in Hearn's Essay?

4. *Either*, Examine the correctness of the following:--'Among all the brilliant examples of the triumph of the imagination over time, Esmond has few equals ; and of the numerous great instances of the successful quickening of a dead past into life by the spirit of fiction, it is excelled by none.' 18

Or, 'There are two heroines who equally command our sympathy--Lady Castlewood, and her daughter Beatrix.' Discuss.

5. Answer *one* of the following:—

16

(a) 'The Book of Job is an attempt to grapple with the problem of human suffering.' Does Job agree with the contention of his friends that his calamities are the evidence and consequence of sin?

(b) Explain and illustrate from your text:--'The reader will always find something in the Psalms in sympathy with his own spiritual state. They are as comprehensive as the human soul and varied as human life ; they treat not life after the fashion of an age or people, but life in its rudiments.'

THIRD PAPER

Examiners:—	{	Mr. JYOTISHCHANDRA BANERJEE, M.A.
		REV. FATHER L. BRYAN, S.J.
		Mr. NARENDRANATH CHAKRAHARTI, M.A.
		„ ASUTOSH CHATTERJEE, M.A.
		„ SARATCHANDRA GUPTA, M.A.
		„ RAMPADA MAJUMDAR, M.A.
		„ RAMAPRASAD MOOKERJEE, M.A., B.L.
		„ SYAMACHARAN MOOKERJEE, M.A.
		„ KUMUDHANDHU RAY, M.A.
		Mr. PRIYARANJAN SEN, M.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Give the substance of *one* of the following passages:— 25

(a) There are some books, when we close them,—one or two in the course of our life,—difficult as it may be to analyse or ascertain the cause, our minds seem to have made a great leap. A thousand obscure things receive light; a multitude of indefinite feelings are determined. Our intellect grasps and grapples with all subjects with a capacity, a flexibility, and a vigour before unknown to us. It masters questions hitherto perplexing, which are not in touch or referred to in the volume just closed. What is the magic? Is it the spirit of the supreme author, by a magnetic influence blending with our sympathizing intelligence, that directs or inspires it? By that mysterious sensibility, we extend to questions which he has not treated the same intellectual force which he has exercised over those which he has expounded. His genius for a time remains in us. 'Tis the same with human beings as with books. All of us encounter, at least once in our life, some individual who utters words that make us think for ever. There are men whose phrases are oracles: who condense in a sentence the secrets of life; who blurt out an aphorism that forms a character or illustrates an existence.

(b) It was sublime humanity: it was forbearance and self-denial which even the immortal gods have never shown us. He could endure to perish by those torments which alone are both acute and slow; he could number the steps of death and miss not one; but he could never see thy tears nor let thee see his. O weakness above all fortitude! Glory to the man who rather bears a grief corroding his breast than permits it to prowl beyond, and to prey on the tender and compassionate! Women commiserate the brave, and men the beautiful. The dominion of pity has usually this extent, no wider. Thy father was exposed to the obloquy not only of the malicious, but also of the ignorant thoughtless who condemn in the unfortunate what they applaud in the prosperous. There is no shame in poverty or in slavery, if we neither make ourselves poor by our improvidence nor slaves by our venality. The lowest and the highest of the human race are sold: most of the intermediate are also slaves, but slaves who bring no money into the market.

2. Give the substance of *one* of the following poems:— 25

(a) All the means of action—
The shapeless masses—the materials—
Lie everywhere about us. What we need
Is the celestial fire to change the flint
Into transparent crystal, bright and clear.

That fire is genius! The rude peasant sits
 At evening in his smoky cot, and draws
 With charcoal uncouth figures on the wall.
 The son of genius comes, footsore with travel,
 And begs a shelter from the inclement night.
 He takes the charcoal from the peasant's hand
 And, by the magic of his touch at once
 Transfigured, all its hidden virtues shine
 And, in the eyes of the astonished clown,
 It gleams a diamond! Even thus transformed,
 Rude popular traditions and old tales
 Shine as immortal poems, at the touch
 Of some poor, houseless, homeless, wandering bard,
 Who had but a night's lodgings for his pains.

- (b) Sunset and evening star,
 And one clear call for me!
 And may there be no moaning of the bar,
 When I put out to sea,

 But such a tide as moving seems asleep,
 Too full for sound and foam,
 When that which drew from out the boundless deep
 Turns again home.

 Twilight and evening bell,
 And after that the dark!
 And may there be no sadness of farewell,
 When I embark ;

 For tho' from out our bourne of Time and Place
 The flood may bear me far,
 I hope to see my Pilot face to face
 When I have crossed the bar.

3. Write an essay on *one* of the following subjects:—

50

- (a) India's contribution to world-culture.
 - (b) Truth is greater than consistency.
 - (c) Your favourite novelist.
 - (d) The trials and tribulations of student life.
-

BENGALI VERNACULAR

Paper-setter and Head Examiner—RAI BAHADUR DR. DINESCHANDRA SEN,
B.A., D.LITT.

Examiners:—	{	MAULVI ABDUL KARIM.
		MR. MANINDRAMOHAN BASU, M.A.
		„ MANMATHAMOHAN BASU, M.A.
		„ GURUBANDHU BHATTACHARYYA, B.A., B.T.
		„ BASANTAKUMAR CHATTERJEE, M.A.
		„ JYOTISHCHANDRA CHATTERJEE, <i>Bhagabatbhushan</i> .
		DR. ABINASHCHANDRA DAS, M.A., Ph.D.
		„ TAMONASCHANDRA DASGUPTA, M.A., Ph.D.
		MR. PURNACHANDRA DE, B.A.
		„ PANCHANAN GHOSAL, M.A.
		„ GOBINDANATH GUHA, M.A.
		„ KUMUDRANJAN MALLIK, B.A.
		„ KALIDAS RAY, B.A.
		„ GIRIJASANKAR RAYCHAUDHURI, M.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. (a) Summarize briefly the political condition of Bengal as depicted in the story of Chandrasekhar, during the subadarship of Kasim Ali Khan. 8

(b) Explain with reference to the context :—

2

যদি পরোপকারে স্বর্গ থাকে, তবে দখীচির অপেক্ষাও তুমি স্বর্গের অধিকারী।

2. Explain any two of the following :—

(a) কেহ যদি তরুণ বৎসরের ফুল ও পরিণত বৎসরের ফল, কেহ যদি মর্ত্য ও স্বর্গ একত্র দেখিতে চায় তবে শকুন্তলায় তাহা পাইবে—গেটের এই উক্তিটি আনন্দের অত্যুক্তি নহে; ইহা রসজ্ঞের বিচার। 5

(b) শকুন্তলাকে একটি Paradise Lost এবং Paradise Regained বলা যাইতে পারে। 5

(c) এতদিন মথুরায় কৃষ্ণ রাজত্ব করিতেছিলেন; বিশ পঁচিশ বৎসর কাল দ্বারীর সাধ্যসাধনা করিয়া তাঁহার স্বদ্র সাক্ষাৎ লাভ হইত; বহুদর্শন দৌত্য করিয়া তাঁহাকে আমাদের বৃন্দাবনধামে আনিয়া দিল। 5

3. Reproduce briefly the sketches given by Rabindranath either of Raja Rajendralala Mitra or of Bankim Chandra Chatterji. 6.

(c) পৌচা রাষ্ট্র করি দেয় পেলৈ কোন ছুতা,

10

জাননা আমার সঙ্গে স্বর্ষ্যের শত্রুতা ?

6. Translate the following passage into Bengali :—

25

Hearing that the earth had swallowed up Devadatta, he feared a like fate for himself. And such was the frenzy of his terror that he recked not of his kingdom's welfare, slept not upon his bed, but ranged abroad quaking in every limb, like a young elephant in an agony of pain. In fancy he saw the earth yawning for him, and the flames of hell darting forth ; he could see himself fastened down on a bed of burning metal with iron lances being thrust into his body. Like a wounded cock, not for one instant was he at peace. The desire came on him to see the all-wise Buddha, to be reconciled to him, and to ask guidance of him ; but because of the magnitude of his transgressions, he shrunk from coming into the Buddha's presence. When the Kārttika festival came round, and by night Rājagṛha was illuminated and adorned like a city of the gods, the king, as he sat on high upon a throne of gold, saw Jīvaka sitting near ; and the idea flashed across his mind to go with him to the Buddha.

7. Write an essay in Bengali on one of the following subjects :—

25

- (a) The evils of your society and the means of removing them.
 (b) The influence of the Rāmāyaṇa and the Mahābhārata on the character of Hindus.

- (c) He prayeth best who loveth best
 All things both great and small ;
 For the dear God, who loveth us,
 He made and loveth all.

ALTERNATIVE PAPER IN BENGALI

Paper-setter:—DR. MUHAMMAD SHAHID ULLAH, M.A., PH.D.

Examiner:—DR. SUSILKUMAR DE, M.A., D.LIT.

Candidates are required to give their answers in standard Bengali in their own words as far as practicable.

GROUP I

HISTORY OF BENGALI LITERATURE : 45 marks

Select any THREE questions from this group

1. What do you know of Vidyāpati ? Discuss his date. How far is it proper to include him in the list of *Padāvālī* writers of Bengal ?
2. Write short notes on the following authors :—Govinda Kavirāja, Narahari Sarkār, Paramānanda Sen, Bhūdev Chandra Mukherjī, Akshay Kumār Barāl, Surendranāth Majumdar.
3. Among the early biographies of Chaitanya, which do you consider to be the most valuable from the historical standpoint ? Give a short biography of Chaitanya based on this book.
4. Give a brief history of the Bengali drama in the nineteenth century.
5. Give a short history of Bengali poetry from Išvar Chandra Gupta to Rabīndranāth Tagore.

GROUP II

BENGALI PHILOLOGY : 25 marks

Answer any TWO questions from this group

1. Discuss the influence of the Dravidian speech on Bengali.
2. Discuss the origin of the following case affixes in Bengali according to Sir G. A. Grierson and Mr. B. C. Majumdar :—

এর, কে, তে, এ.

3. Describe briefly the different stages of the Aryan speech from Vedic to modern Bengali.
4. Give exhaustive examples of *samāsa* compounds of genuine Bengali words.

GROUP III

ESSAY IN BENGALI : 30 marks

Write an essay in Bengali on any one of the following subjects :—

- (a) Comparison between the poet and the painter.
- (b) Respect for law and order.
- (c) Indian nationalism.
- (d) The vernacular as a medium of education.
- (e) Social service.
- (f) Humanity.

ASSAMESE VERNACULAR

Paper-setter :—MR. BANIKANTA KAKATI, M.A.

Examiner :—MR. AMBIKANATH BORAH, M.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into Assamese the following passage :—

15.

The real cause of women's unrest is that they miss their vocation. It was Byron who said: 'Man's love is of man's life a thing apart; it is woman's whole existence.' We generally believe that a woman's place is in her home, but homes are disappearing. The reduction of the household labour due to the machine and the displacement of the home by the hotel has permitted an enormous amount of energy to accumulate without an adequate object for its employment. The husband is more busy than ever. The wife has much idle time on her hands. In the absence of absorbing work, she becomes unhappy and neurotic, a mere

waste product without meaning or purpose. . . . The source of all the trouble is that women do not have enough to do. The poverty of an empty life is driving them into unnatural channels and it is only just that they should be provided with congenial occupations.

2. Translate the following passage into modern Assamese:— 10

আৰ পুনৰ্জীৱ বঙ্গালে মহাৰাজ্যত ৩ লাখ নৰৈ হস্তী খুজি অধিক গৰ্ব
বচন বুলিলে ছৈয়দ জাফৰ কটকীত কৰি। এই কথা শুনি ৰাজ্য চক্ৰধ্বজে
মহাক্ৰোধ কৰি বচন বুলিলে,—“বঙ্গালৰ অধীন তই থাকিবত কৈ মৰণেহে
উচিত”। তাত পাচে মহাৰাজ্য পাত্ৰ-মন্ত্ৰী সহিতে আলচ কৰিলে বঙ্গালক
ধৰিবাক প্ৰতি। সেই বেলা বৰবৰুৱাৰ পুতেক লাচিত-ডেকাক বৰফুকন
পাতি পঠালে কলিয়াবৰলৈ কুকুৰা ঠেং চাই। ই ঠাইতে বঙ্গালৰ কটকীকো
ৰাখিলে। যুদ্ধ কৰিবাকো আজ্ঞা দি পঠালে বৰফুকনলৈ।

3. *Either*, Examine *Prahrūd Carit* as a poem of conflict between two irreconcilable issues. 15

Or, Criticize the statement that the bird in *Keteki* is unnecessary except to give unity to the varried descriptions of nature in spring.

4. *Either*, Describe the character of Child Krishna. 15

Or, Write out the story of *Rukminī Haran* by Sankar Deva.

- 5, Explain with reference to the context any two of the following passages:— 15

- (a) ইতৰত থকা মছৰা কাঠীটি, ইতৰতে লাগি ৰয়।
(b) তোহোৰ মুখৰ গন্ধ, তই সে চুকগী।
(c) মোৰ পুত্ৰ তোক, ৰাজ্য ভাৰ দেওঁ, মাধবক পাৰা গালি।

6. Frame sentences to illustrate the following verbal forms:— 10

কৰোঁতে, কৰাহেতেন, কৰিলে, কৰিলত, কৰি।

7. Write an essay on one of the following subjects:— 20

(a) The literary equipment of a present-day Assamese author.

(b) A choice between Compulsory Primary Education and a University for Assam.

HINDI VERNACULAR

Paper-setter—MR. NALINIMOHAN SANYAL, M.A.

Examiner—MR. LALTA PRASAD SUKUL, M.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Answer the FIRST FIVE questions and TWO of those remaining

The answers are to be worded in Hindi, unless otherwise directed.

1. Translate into Hindi:—

15

Presently the philosopher painted in glowing colours the life and manners of a young man given over to pleasure. 'Unhappy youth', said he, 'what words shall I find equal to thy fallen state? Thou art the reproach of thy parents, the disgrace of thy country, the scorn or pity of every noble mind. How is nature shamed in thy person, how are all her choicest gifts wasted! That strength, which would have made thee the glory of thy city, and the terror of her foes, is basely thrown away on a life of ease and pleasure; thy youth and beauty are wasted in riot, and withered before their time in disease. Instead of the eye of fire, the fearless bearing, the firm step, a paleness sits upon thy face, a bloated fatness weakens thy limbs, and presents a picture of human nature in its most abject state.'

2. Give a very brief summary of the following in simple idiomatic Hindi:—

15

एक ऐसा युग आया था जब बंगाल की खीरपीय प्रकाश की परछाई में दमकने का गर्व था। दमक थी निश्चिन्त—चकाचौंध करनेवाली काफी दमक थी, पर उस परछाई की दमक में उष्णता नहीं थी। बंगाल में ऐसे कुछ लोग पहले से ही उत्पन्न हो चुके थे जिन्होंने अनुभव किया था कि इस परछाई के प्रकाश में भारतीय मन मोड़कत हो जाएगा, पर वह उसके सहारे फल-फूल न सकेगा। वे जानते थे कि भारतीय ज्ञान की मूलहीन कहकार तुच्छ बतलाने के विदेशियों द्वारा किये गये प्रयत्न का कारण मिथ्या कल्पना और द्वेष का भाव है, न कि वैज्ञानिक विवेक्षण और पूर्ण खोज पर आश्रित तुला मत।

3. (a) Write sentences to bring out the genders of five of the following words :—गुनाह, खेरात, सँस, हलचल, किरण, भौ, व्यक्ति, विधि, कोयल, शराब।

5

(b) Comment on the peculiarities of five of the following sentences :—

5

(i) आप समाज के भूषण हो।

(ii) मैं रात को कुछ नहीं खाता हूँ।

- (iii) उस मैदान के चारों ओर पहाड़ थे ।
- (iv) मैंने अभी तक नहीं कहाया ।
- (v) ज़री सी बात पर वह बिगड़ बैठते हैं ।
- (vi) कल मेले में बड़ी मुसाफिर की भीड़ थी ।
- (vii) आगरा में ताजमहल है ।
- (viii) यह जुदी बात है ।

4. Write an essay on *one* of the following subjects:— 20

(a) The progress of Hindi literature in the present century, specially in the departments of poetry, drama, fiction, and prose in general.

(b) Labour: its dignity—what has been the ideal in India hitherto—what it ought to be.

(c) The influence on our character of the company we keep: often selection of company does not depend upon our choice but upon our surroundings—with the growths of reason we ought to rise above our situation, and select and live in the midst of good companions.

5. Explain any *three* of the following extracts:— 21

(a) गुरु बिरह दियो उपदेस सुनो ब्रजबाला ।

पिय बिकुरन दुख की विकाशी तुम सगकाला ॥

मन के मनके की जपो पिया की माला ।

बिरहिन की तो हैं सभी निगली चाला ॥

पीतम से लगी लौ अचल समाधि न टारी ।

साँची जोगिन पिय बिना बियोगिन नारी ॥

(b) सबन के ऊपर ही ठाढ़ी रहिवे के जोग, ताहि खरी कियो जाय जारिन के नियरे ।
जानि गैर भिसिल गुसैल गुसा धरि उर, कौन्ही न सलाम न बचन बोले सियरे ॥ भूषन भनत
महाबीर बलकन लागो, सारी पातसाही के उड़ाय गये जियरे । तमक ते लाल मुख सिवा की
निरखि भये, स्याह मुख नौरंग सिपाह मुख पियरे ।

(c) लोक-समाज राज केहि लेखे ।

लषन-राम-सिय-पद बिनु देखे ॥

बादि बसन बिनु भूषन-भाऊ ।

बादि बिरति बिन ब्रह्म-विचार ॥

सहज सरीर बादि बहु भोगा ।

बिनु हरि-भगति जाय जप-जीगा ॥

जाय जीव बिनु देह सुहाई ।

बादि मोर सब बिनु रघुराई ॥

(d) राक्षसि मिलत प्रतीति न आवति । यदपि नाथ विधु बदन विलोकति, दरसन की सुख पावति ॥ भरि भरि लोचन रूप परम निधि, सर में आनि दुखाति । बिरह विकल मति दृष्टि दुहूँ दिसि, सचि सरधा ज्यों धावति ॥ चितवति चकित रहति चित अंतर, नैन निमेष न लावति । सपनी चाहि कि सत्य ईस यह, बुद्धि बितर्क बनावति ॥

6. What is the main theme of Brajānandan Sahāy's *Saundaryopūṣaka*? Point out its merits and demerits with special reference to its subject-matter, the manner in which it has been handled, its style and its moral tone. 8

7. What are the essential features of a drama? Which among the nine *rasas* does Hariśchandra's *Chandrāvalī* delineate? Was the devotion of Chandrāvalī superior to that of Rādhā? Was there any rivalry between Rādhā and Chandrāvalī? 8

8. What was the mission of Uddhav to the Gopis of Vṛindāvan? Quote passages from *Sūrdās* to show that the Gopis were not in the least affected, but on the contrary successfully refuted Uddhav in their free and easy manner. 8

9. Some say that Bhūshaja's poems were no real poetry but only भउते. Criticize this statement. 8

MAITHILI VERNACULAR

Paper-setter and Examiner—KUMAR GANGANANDA SINHA, M.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. *Either, (a) Explain with reference to the context:—* 10

तेन्हें बेवि सहीअरहि गोचरिअछँ सुखतान ।

तावे न जीवन नेह रह जावे न लगगइ मान ॥

Or, (b) Give a short account of Kīrti Sinhā as depicted in Vidyāpati's Kīrtilalā.

2. Discuss how Umāpati has delineated the characters of कृष्ण, सत्यभामा, and कृष्णायी in his *Pārijāta-haraya Nūṭaka*, and illustrate your statements as far as possible. 15

3. *Either, Describe after Manabodha in simple Maithili the feats of Kṛishṇa and Balarāma at Mathurā culminating in the restoration of the kingdom to Ugrasena.* 15

Or, Write a sketch of the character of the heroine in the Sāmavāṭ' punarjanma of Jīvana Jhā

4. Amplify in Maithili the idea contained in the following:— 15

जीवन नीका जीर्ण पड़ल अछि डोलीय प्रबल बयार ।

जर्जर इमल में होइत अछि अतुलित भय संचार ॥

5. Translate into Maithili:—

15

The main purpose of any religion is to make men good. Its value is tested by the measure in which it sets that before it as an aim and accomplishes the aim it sets before itself. Therefore there is no more central inquiry that we can make in regard to any religion than as to the ideal of a holy life that it holds up and the means it provides for the realization of that ideal.

6. *Either*, Are the following sentences in Maithili correct? If not, write them correctly and give reasons:— 10

- (a) हम नहाबउ जाइ छी । (b) पुनु हुनि कहलथीन्ह जे जेभउ तँ जाइ ।
(c) रतिका बात कहौ दिहैन । (d) चमारिन क अङ्गना जनु जाइ । (e) बहिनियाँ काने के ।

Or, Illustrate the use of पूजब in प्रेरणार्थक क्रिया, लाठी in नामधातु and construct sentences to illustrate the use of any *three* of the following:—
(a) सब गृण गोबर भेल । (b) भेल बिषाह भीर करबह कौ ?
(c) पेट करे कह कह जूड़ा करे महमह । (d) हरिनक गवाही सगर देल दुन पड़ा कय बन गेल । (e) भोजक काल कुन्हड़ रोपै छथि ।

7. Write an essay on any *one* of the following subjects:— 20

(a) *Roads*: (i) Their importance, politically, commercially, and socially. (ii) Their relation with civilization. (iii) Condition of Indian roads to-day and suggestions about improvement.

(b) *Plain living and high thinking*: (i) An old Indian ideal. (ii) How far was it perfected by the ancients? (iii) How it is being neglected and why. (iv) Should we give up the ideal or work for it?

NEPALI VERNACULAR

Paper-setter and Examiner—PANDIT DHARANIDHAR SARMA, B.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. “सितौ तिनें रजौटाइको शिरपेचका मणिकी टकली पाउदान रत्निरहेकी एक क्वी
हालीमुहाली रजाइ पाउदा पनी भइल.” 10

Explain fully the significance of the above with reference to the context.

2. Write a note on सङ्गम-मणि and describe the part played by it in the drama of विक्रमोर्वशी. 10

3. Explain clearly the idea contained in one of the following passages:—

(a) शिशा दुःख प्रकारको हुन्छ, एक दृष्टान्त स्वरूप र दीक्षी उपदेश स्वरूप, त्यसमा पहिलो प्रकारको शिशाको प्रभाव प्रबल र दीक्षी प्रकारको शिशाको प्रभाव निर्बल हुन्छ, मानिसमा पहिलो प्रकारको शिशाको प्रभाव अधिक र दीक्षी प्रकारको प्रभाव कम पर्दछ, 'आम' बाबु, दाज्यू, दिदी, नौकर, चाकर, साथी, मित्र आदि प्रथम शिषक हुन्, यिनको शिशा मौखिक हुँदैन, यिनै हकको घेरै कुरा देखेर नै बालक शिशा प्राप्त गर्दछन्; किन भने बालक विशेष गरेर अनुकरणशील नै हुन्छ; यसकारण बाबु, आमा, दाज्यू, दिदी आदिले बालकलाई उच्च आदर्श देखाउनु, शिकाउनु उचित छ, 10

(b) एकताको उद्देश्य सिद्धिमा हामीले सत्य र सद्गुणताको अभ्यास गर्दै जानु पर्दछ त्यसो भए मात्र चक्र चक्र उपयुक्त गुणहरू सहजैमा सुलभ भई हामीहरू अवश्यमेव कृतकार्य हुन, शक्त छौं, अतएव हरतरङ्को उन्नति र सुख प्राप्तिको इच्छा राख्ने व्यक्ति हरेकले एकताको आराधनामा सदा तत्पर रहनु पर्दछ, 10

4. Explain, and state by whom and on what occasion the following statements were made:— 51

(a) हात काटिएको शिकारीले अचिन्तितको शिकार उम्की सकेपछि ले बाबै सुझुझा धर्मत होला भन्द छ, 10

(b) दक्षी सावित भए पछि नालिस परेको जति भर्ना गर्नु पर्छ, 10

5. Give the figurative meanings of any five of the following :—(a) बाँखा फुट्नु। (b) भाइलाई पुराण सुनाउनु। (c) काखी च्यापनु। (d) कान फुल्नु। (e) मनले खानु। (f) होना बाट खस्नु। (g) भाइको कम्पट समाउनु। 10

6. Construct sentences to illustrate the correct and idiomatic uses of कि and ले in Nepali. 5

7. Amplify the following statement:—खाने मुखलाई जुँगाले, केकतैन। 15

8. Translate into Nepali:— 15

Jang Bahādur was received with great outbursts of public joy. The route taken by him was lined with troops on both sides; the principal civil and military officers of the kingdom went out to meet him on the banks of the Bagmati river; immense crowds thronged the streets and collected on every possible standing ground, as if the whole country had come out to welcome him; people from the remotest provinces had

gathered to see him as though he were the inhabitant of another planet. All the towns and cities were astir to accord him a hearty welcome and fought with one another as to which should do the greatest honour to him and to itself. The road from the Kālimati bridge to the palace was decorated with flags and bunting, and adorned at intervals with wreaths of triumph emblazoned with suitable mottoes of welcome.

9. Write an essay in Nepali on any *one* of the following subjects:—20

(a) The striking peculiarities in character and customs of any one of the well known tribes of Nepal.

(b) Contentment is the true source of happiness.

(c) The man whom you love and admire the most—a short sketch of his life, and the lessons to be drawn from his career.

(d) Important sports and festivities of the Nepalese.

MARATHI VERNACULAR

Paper-setter and Examiner—PROF. D. R. BHANDARKAR, M.A., PH.D.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Write an essay in Marāṭhī on any *one* of the following :— 20

(a) Higher education in India.

(b) Village reconstruction.

2. Translate into Marāṭhī the following:— 15

Western literature is understood here in a comprehensive sense so as to include western history and western philosophy. The claims of the latter to our attention are readily acknowledged because the Indian mind, with its reverence for abstract truths, can always appreciate the quest of ultimate principles—wherever it is undertaken and from whatever standpoint. But the utility of a study of western history is not easily allowed, and some of our teachers do not hesitate to ascribe to it a positively sinister influence on the ground that its gospel is that of an intense nationalism fortified by implications of hatred and injustice to others.

3. *Eiher*, What do you know of Dhondo Keshav Kārve as a social reformer ? 10

Or, State briefly what subjects are treated by Vāman Malhār Joshi in his नीतिशास्त्रप्रवेश.

4. What are the main topics discussed in the भाषाशास्त्र of मराठी भाषा ? 10

5. What are the advantages and disadvantages of हास्यविनोद according to N. C. Kelkār ? 10

6. Explain in Marāṭhī the following, with reference to the context :— 20

(a) स्वयें माळं नये रावण । अंगद जाणोनि आपण । पायीं दण्डीनि दशानन ।
मुकुट हिरीनी घेतला ॥

(b) लघ्नाचिया पहिलिया दिवसांत यावें
संगीं समय बल यादव-सैन्य ध्यावें ।
या चैद्य-मागध-बलांबुधितें मथावें
मातें निशाचर-विषी करुनी हरावें ॥

(c) फूल देऊनि तिला उत्तराई । हीडं मी, समज दे चतुराई ॥
देतसें तबचि ती तुजला गे । खेद हा न करचें तुज लागे ॥

(d) स्व-पितयास न ही अधमा गती ।
म्हणवुनी विनवी शिष्ट मागती ॥
हरि म्हणे सुत ज्यांस असा असे ।
सु-गति पावति पातकिही असे ॥

7. Amplify the following in Marāṭhī :—

15

पूज्यता डोलां न देखावी । स्व-कीर्ति कानीं नायकावी ।
हा अमुका रोखी नोहावी । सेचि लोकां ॥
तेथ सत्काराची कें गोंठी । कें आदरा देईल मंटी ।
मरणेसीं साटी । नमस्कारितां ॥
वाचस्पतीचेनि पाडे । सर्वज्ञता तरी जोरे ।
परि वेडिवेमाजि दडे । मझिमे मेथें ॥
चातुर्य लपवी । महत्त्व हारवी ।
पिसेपण मिरवी । आवडोनी ॥
लौकिकाचा उद्देग । शास्त्रांवरी उबगु ।
उगेपणीं चांगू । आधी भळ ॥

URDU VERNACULAR

Paper-setter—KHAN BAHADUR MAULVI MD. YUSUF, M.A.

Examiner:—KHAN BAHADUR REZA ALI WAHSHAT

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Give a general review of Urdū poetry through its successive stages of development, and estimate Amīr Khusrau's influence on its earlier period. 20

2. *Either,*

20

کلام میر سمجھے اور زبان میرزا سمجھے

مگر ان کا کہا یہ آپ سمجھیں یا خدا سمجھے

What is the reference in the second hemistich of the above line? Throw light on the allusion from the life and works of the poet about whom it is said.

Or, Compare the poetical merit of Dard and Nāsikh.

3. Translate into Urdū :—

15

Ether, (a) Few wiser men have ever existed than the late Dr. Franklin, the American. From the low station of a journeyman printer to the elevated one of ambassador from his country to the court of France, he always distinguished himself by sagacity in discovering, and good sense in practising, what was most beneficial to himself and others. He thoroughly understood common life, and all that conduces to its comfort, and he has left behind him treasures of domestic wisdom, superior, perhaps, to any of the boasted maxims of antiquity. He never let slip any opportunity of improving his knowledge, whether of great things or of small. He prolonged his life by temperance to a great age and enjoyed it to the last. He rose to wealth but obtained it by honourable means. Few men knew more than he, and none employed knowledge to better purposes.

Or, (b) It is said that the effect of knowledge is to make women pedantic and affected; and that nothing can be more offensive than to see a woman stepping out of the natural modesty of her sex to make an ostentatious display of her literary attainments. This may be true enough; but the answer is so trite and obvious that we are almost ashamed to make it. All affectation and display proceed from the supposition of possessing something better than the rest of the world possesses. Nobody is vain of possessing two legs and two arms; because that is the precise quantity of either sort of limb which everybody possesses. Diffuse knowledge generally among women and you will at once cure the conceit which knowledge occasions while it is rare. When learning ceases to be uncommon among women learned women will cease to be affected.

4. Explain or amplify any two of the following passages:—

15.

(a)

چمن میں غنچہ گل سے یہ کھر اڑ گئی شبنم
مذاق جور گلچیں ہو تو پیدا رنگ و بو کر لے
اگر منظور ہو تبھکو خزان نا آشنا رہنا
جہاں رنگ و بو سے پہلے قطع آرزو کر لے
اسی میں دیکھ ! مضمر ہے کمال زندگی تیرا
جو تبھکو زدن دامن کوئی آئینہ رو کر لے

(b)

لڑکیاں پڑھ رہی ہیں انگریزی
تھوندہ لی قوم نے فلاح کی را
روش مغربی ہے مد نظر
وضع مشرق کو جانتے ہیں گنا
یہ قراما دکھائیگا کیا سیس
پردہ اٹھنے کی منتظر ہے نا

(c)

زندگانی کی حقیقت کھن کے دل سے پوچھ
جرئے شیر رتیشہ و سنگ گران ہے زندگی
بندگی میں گھت کے رہ جاتی ہے اک جوئی کم آب
اور آزادی میں بحر بیکران ہے زندگی
آشکارا ہے یہ اپنی قوت تسخیر سے
گرچہ اک مٹی کے پیکر میں نہاں ہے زندگی

5. Write an essay in Urdū on any *one* of the following subjects :— 20

(a) The achievements of science: what they are—how and where brought about—their effect on the development of the world in its material, social, and political aspects.

(b) Man is the architect of his own fate: explain the maxim—give illustrations from actual life and history—note exceptions if any—and summarize your conclusions with reasons, for or against your own views on the subject.

(c) What language in India can be its *lingua franca*? Discuss its claim in comparison with others, with special reference to its literature and general utility and capacity for future development.

6. Write short paragraphs using any *four* of the following phrases or sentences :— 10

سدا ناؤ کاغذ کی چلتی نہیں — ہاتھی کے پاؤں میں سب کا
 پاؤں — جلتی آگ پر تیل ڈالنا — درودھ کا جلا چھاچھ کر پھونک
 پھونک کر پیتا ہے — گھر کا بھیدی لنکا ڈھائے — دادا جی کی
 فاتحہ حلوائی کی دکان *

URDU (VERNACULAR)

ALTERNATIVE PAPER

Paper-setter :—KHAN BAHADUR REZA ALI WAHSHAT.

Examiner :—PROF. MUHAMMAD ZUBAIR SIDDIQUI, M.A., PH.D.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Give a sketch of the life of *any one* of the well-known poets whose account you have read in the *Ab-i-Hayat*. Discuss the style of his poetry with necessary quotations. 45

2. Write a note on the origin of the Urdu language, and state how the language was influenced by the advent of Islam in India. 25

3. Write an essay on *any one* of the following subjects :— 30

(1) The uplift of the Harijan.

(2) The present economic distress in India and the causes that have produced it.

(3) The claim of Urdu to be the common language of India.

KHASHI VERNACULAR

Paper-setter and Examiner—MR. ROY ROWLAND THOMAS, M.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into Khasi:—

15

All the four judges of the court were on the bench. Wright, who presided, had been raised to his high place over the heads of many abler and more learned men solely on account of his unscrupulous servility. Allibone was a Papist, and owed his situation to that dispensing power, the legality of which was now in question. Holloway had hitherto been a serviceable tool of the government. Even Powell, whose character for honesty stood high, had borne a part in some proceedings which it is impossible to defend. He had, in the great case of Sir Edward Hales, with some hesitation, it is true, and after some delay, concurred with the majority of the bench, and had thus brought on his character a stain which his honourable conduct on this day completely effaced.

2. Compose a dialogue in Khasi on a current topic between a villager and a townsman. 10

3. Write an essay in Khasi on the following subjects:— 20

(a) The question of disarmament.

(b) The world depression.

(c) The value of character.

(d) The possibilities of the Dawki motor road.

4. Phi tip aiu ia ka jingshaniah U Dabid ha ka jingaiei U Blei kumba phi shem ha ka Pslam kaba 23? 15

5. Iathuh lyngkot na ka Kitab Niam Khein ia ki ain ka ri Khasi hyndai. 15

6. Phi tip aiu shaphang ki Lang-sla lane ki Khadarkur na Ka Pomblang Nongkrem bad Ka Thang Syiem Sohra? 15

7. Either, What do you know from Ka Niam Jong Ki Khasi about 'Haba iap mynsaw'? 10

Or, Ha Ka Niam-Ki-Khasi la thoh aiu shaphang ka Pyrthai?

ALTERNATIVE PAPER IN ENGLISH

Paper-setter—RAI LALITMOHAN CHATTERJEE BAHADUR, M.A.

Examiner—MR. C. C. BISWAS, C.I.E., M.A., B.L.

Candidates are required to give their answers in their own words as far as practicable.

The questions are of equal value.

GROUP A

Full marks—50.

Out of this group answer Question 5 and any THREE of the others.

1. Give a short account of the Traiping Rebellion, and relate how Gordon put it down.

2. Give a brief account of the Tractarian Movement.
3. Sketch the character of Florence Nightingale.
4. (a) Explain briefly the prefectorial system established by Dr. Arnold at Rugby.
(b) Relate the story of Gordon's resignation of his appointment as private secretary to Lord Ripon.
5. Explain, in the light of the context, *two* of the following:—
(a) Fatalism is always apt to be a double-edged philosophy, and Gordon's fatalism was no exception.
(b) It is not knowledge but the means of gaining knowledge which I have to teach.
(c) A 'nurse' meant then a Mrs. Gamp.

GROUP B

Full marks—50.

6. Compare Shelley and Keats as poets of Nature. Illustrate your answer by extracts from their poems.
 7. Give a brief analysis of the *Immortality Ode*.
 8. Explain *four* of the following in the light of the context:—
(a) Like stout Cortez, when with eagle eyes
He stared at the Pacific—and all his men
Looked at each other with a wild surmise—
Silent upon a peak in Darien.
(b) Eternal spirit of the chainless Mind!
Brightest in dungeons, Liberty, thou art—
For there thy habitation is the heart—
The heart which love of Thee alone can bind.
(c) I've 'heard of hearts unkind, kind deeds
With coldness still returning ;
Alas! the gratitude of men
Hath oft'ner left me mourning.
(d) Thou on whose stream, 'mid the steep sky's commotion
Loose clouds like earth's decaying leaves are shed
Shook from the tangled boughs of Heaven and Ocean,
Angels of rain and lightning.
(e) Through thousand ages hath thy childhood run:
On timeless ruin hath thy glory been:
From the forgotten night of loves fordone
Thou risest in the dawn of hopes unseen.
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GUJARATI VERNACULAR

Paper-setter—DR. I. J. S. TARAPOREWALA, B.A., PH.D.

Examiner—MR. HARGOVIND DAS SETH.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

પહેલા ત્રણ સવાલો તથા બાકીનામાંથી કોઈપણ પાંચ ના જવાબ લખો.

1. નીચે લખેલા વિષયોમાંથી કોઈપણ એક પર નિબંધ લખો :—

20

(ક) માતૃભાષા દ્વારા શિક્ષણ.

(ખ) આધુનિક કેળવણીમાં પ્રાચીન ભાષાઓનું સ્થાન.

(ગ) ખુદ્દુ ગુજરાત.

2. નીચે આપેલા ફકરાનો સાર ટૂંકમાં સમજાવો :—

15

અજ્ઞાનમાંથી જ્ઞાન પામવા મથતા બાળકો આ ઉમરે ખૂબ જ અસર્ય હોય છે. ડાહ્યાના જુદા જુદા પ્રયોગો કરતાં એ નવા શબ્દોચ્ચાર શીખે અને પોતાનું નવું વ્યક્તિત્વ બનાવીએ શબ્દો વાપરે. નર નારી ભક્તિ ના ઘોઠાવા કરતાં કરતાં છેવટે એની ખરી કીમત પોતાની શક્તિ પ્રમાણે આંકવા માંડે; કોપ, શોક, સુખ, દુઃખના જુદા જુદા ભાવો માટે સ્વરના આરોહ અવરોહના માપ સ્વાભાવિક બુદ્ધિથી પોતે કાઢવા માંડે. પોતાની આસપાસની દુનીયાના ભાવો અને ચીજોને પારખવા અને તેનું વર્ગીકરણ કરવા માંડે. એ બધી વસ્તુઓ બાળકને નવા સ્વરૂપમાં દેખાડે છે. દર દહાડે તે વધે છે અને કંઈક નવી શોધ કરે છે. સ્વતંત્રતા પદાર્થપાક આજ વખતે તે ચીજ છે અને પોતાની આસપાસની દુનીયાનો ઓછો આધાર લેવા માંડે છે. બાળકનું ખેરખટું વ્યક્તિત્વ આજ વખતે બંધાવા માંડે છે.

15

3. નીચેના અંગ્રેજીનો ગુજરાતી અનુવાદ કરો :—

It is impossible to fix an age at which the symptoms and signs of approaching old age first manifest themselves. To some considerable extent it depends on the hereditary factor, for longevity runs in families, but the actual circumstances of life are also important. Some men and women are old at fifty, others may preserve the mental and physical vigour of maturity until they are sixty or even seventy. There is enormous variation in the time of onset of the decline in life, but for practical purposes we may say that when a person passes his sixtieth

year it is time for him to consider how far he is justified in pursuing the same occupation, the same sport or exercise, and the same habits of life to which he is accustomed.

4. સુદામા ચરિત્રમાં પ્રેમાનંદની કઈ કઈ ખૂબીઓ તમને ખાસ માલમ 10
પડે છે? ખુલાસાવાર (અને બને તો કાવ્યમાંથી ઉતારા કરી) લખો.

5. નરસિંહ મહેતા તથા મીરાં ખાઈની લક્તિની તુલના કરો. તમને 10
પોતાને આખે માં કોણ વધારે આકર્ષે છે. કારણો સાથે વીગતવાર લખો.

6. અખાના લખાણુ “ચાબખા” સમાન લેખાય છે તેમાટે તમારો 10
શો અભિપ્રાય છે.

7. મુંજ અને મૃણાળવતીનો બંદીખાનામાં પહેલો મેલાપ થાય છે ને તે 10
સમયે મૃણાળનો દૃશ્ય પલટો થાય છે તે સારી રીતે સમજવો.

8. સ્ત્રીદૃશ્ય સમજવાની શક્તિ મુનશીના લખાણમાં કેટલે અંશે જરૂર છે? 10
તમારાં પાઠ્ય પુસ્તકમાંથી દાખલા ટાંકી સમજવો.

9. નીચેના ઉતારાઓ પર ટુંક દીકા લખો:— 10

(ક) જે કાવ્ય કલંકિત કરે, રસ કલંકિત કરે, નયોત્સાહનું અમૃત કલંકિત કરે—કાલે કહેશો કે પ્રેમ કલંકિત કરે—તો એ કલંકિત જીવનશું ખાંડું?

(ખ) કુપ રહેવાનો વખત તો ત્હારે છે. આ પળે મારો દિગ્વિજય પૂરો થયો.

(ગ) હરિજનને ગ્રહ કહોશું કરે, જે ગ્રહ ખાપડા પરવશ કરે;
રવિ ભમતો નશશીનો ખે, રાહુ તો ધડવોણો રહે,
કાણે શુક્ર ને લુલો રાત્રિ, બૃહસ્પતિએ સ્ત્રી ખોઈ આપણી.

(ઘ) સદ્ગુણ સાથમાં હું એક ભુંડો, ભુઝાથી વળી ભુંડોરે;
ત્હમારે મન માને તે કહેજે, રનેહ લાગ્યો છે મ્હને ઉડારે.

(ક) સકર ખોરનું સાકર જીવન, ખરના પ્રાણુ જહરે,
ક્ષાર સિંધુનું માછળું નયમ મીઠા જળમાં મરે.

TELUGU VERNACULAR

Paper-setter and Examiner—DR. B. RAMCHANDRA RAU, M.A., PH.D.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate the following verse into idiomatic Telugu:— 20

Oceans of water and mountains of stone,
Nature creates on the earth and around,
Forming the models of silence and sound,
Also the glory of colour and tone.

Mountains of labour and oceans of love,
God doth create for His creatures on earth.
Helping to kindle their spirit and worth
Also the glory of Heaven above.

Mountains of troubles and oceans of tears
Mankind creates in its life and its tasks
Forming the growth of confusion and masks
Also the glory of struggle appears.

Oceans of feeling and mountains of thought
Art recreates into pictures of truth
Helping the Master and Artists forsooth
All into harmony richest e'er wrought.

2. లక్షణరావుగారి వ్యాసావళియందు దేవి నైన నొక 20
వ్యాసము తీసి మీ స్వంత మాటలందు వ్రాయుడు.

3. వాలి సుగ్రీవుడును, లక్ష్మణుడును గురించి వ్యాసములు 20
వ్రాయుడు.

4. ఈ క్రింది పద్యము యొక్క తాత్పర్యము వ్రాయుడు:— 20

ఒక్కడె సర్వభూత హృదయోజ్వలుడౌ జగదీశ్వరుండుపెం
పెక్కి యశేషభూ భువన మేలెడి సాత్త్విక ధర్మ మొక్కటే
ఇక్కరగాన్ బరాత్పరుని సృష్టి విధానము వాగుచుండగన్
జెక్కులి కేల తండ్రి! పృథివీసలి రెండు మతంబులున్నవే?

5. Write an essay in Telugu on the significance of the following 20
verse—

'Tis better to have loved and lost
Than never to have loved at all.

SINHALESE VERNACULAR

Paper-setter—REV. P. SEELANANDA.*Examiner*—MR. DEVAPRIYA WALI SINHA, B.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English:—

20

බුදුහු දෙවර්මිති වැඩවසන කල්හි අනෙපිබු මහ
සිවුහු බුදුන් කෙරෙ බණ අසා, වහන්සේ සෙව පත්
සියයක් සතුන් ගෙණ මාගේ ගෙව වඩුන් මැනවැයි,
නිමිනග්‍රිහය කොට ගියහ. බුදුහු අභිවාසනකොට
එදවස සිටි වේලාවද් රැසිද් ගිය කල්හි අලුයම්හි දසද
හසක් සත් වල බැලූහ.

එකල්හි නඤ්ජනාඤ්ඤාමි නාගරාජ බුදුන්ගේ
නැවතැස පැණින. බුදුහු මේ නාගරාජ අපගේ නුව
නැස පාණෙයි මුහුට උපනිශ්‍රය ඇතිතෝ යි අවරනාහු
මෙ මිස දිව්ග ගත්තේය. තුනුරුවන්හි නොපහත්තේ
යයි දෑක මුහු මිසදිව්ගයෙන් තොරකරන්නට නිස්සෙක්
කවර හෝයි අවරනාහු මහමුගලත් මහතොරුන් දුටුහ. 20

2. Summarize in English the story of "Ambatta Sutta". 20

3. Explain the following:—

රාදෙය්ද නුනුව	ණ
මසුරු දුසිරික් නොපම	ණ
උසුත් මුල් කළි නැ	ණ
ඇතිව වැරඹෙන සේක මුනිමේණ	

4. Write notes on the following:—

20

සිව්වේ සත් මුතු	5
පරකෙර පැමිණි වදන	5
කුඳදත් පොකුරු සා	5
මෙ ආ? බමුණන්ද ලොවපරස	5

5. Translate into Sinhalese:—

20

The Scripture of the Saviour of the World.
 Lord Buddha—Prince Siddhartha styled on earth—
 In Earth and Heavens and Hells incomparable,
 All-Honoured, Wisest, Best, Most Pitiful;
 The Teacher of Nirvana and the Law;
 Thus came he to be born again for men.
 Below the highest sphere four Regents sit
 Who rule our world; and under them are zones,
 Nearer, but high, where saintliest spirits dead,
 Wait thrice ten thousand years, then live again;
 And on Lord Buddha waiting in that sky.

MALAYALAM VERNACULAR

Paper-setter and Examiner—MR. C. E. ABRAHAM, M.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Answer Questions 5 and 6 and any other THREE.

1. മാര്ത്താണ്ഡവമ്മയിലെ ഫലിതരസ പ്രധാനമായ ചില ഭാഗങ്ങൾ ചൂണ്ടിക്കാണിച്ച് ഗ്രന്ഥകര്താവിന്റെ രസികത്വം വിശദമാക്കുക. 16
2. സുന്ദരയുടെ സ്വഭാവലക്ഷണങ്ങൾ വിവരിക്കുക. 16
3. പുണ്യയാത്ര, കാവ്യലക്ഷണം, മഹത്വലക്ഷണം, എന്നിവയെക്കുറിച്ച് റാസലസിത്തിന്റേ ഹേതു ഗ്രഹിക്കാം? 16
4. ഭക്തി, കരുണ, എന്നീരസങ്ങൾ ബഹിര വില്പനയിൽ ഹേതുമാത്രം പ്രകാശിച്ചിരിക്കുന്നു? 16

5. Without attempting a literal translation, express the ideas in the following passage in your own words in the vernacular:— 20

The way to cope with worry is to sit down and contemplate the whole situation. If necessary, write it out. I advocate this because I have tried it. In a perplexity with a number of pros and cons, it is almost essential to write them all out so that one can survey the whole problem. Then one should make up one's mind as to what is the next thing to do. If at all practicable, do it at once. This is to let the clutch in, and, instead of the energy of the mind racing and expending itself without any result, the machinery is being engaged, the energy of the mind is being drawn away into definite action, and worry is killed. If it is impracticable to do anything at once, decide what is to be done. Then the mind is enabled to turn to other interests. When you have done all that can be done, and viewed the whole situation and faced up to it, you will have killed worry. To worry is only to unfit yourself for whatever demands will be made upon you, and to let the energy of the mind waste itself in fruitless conjectures.

6. Write an essay on *one* of the following:— 32

- (a) Example is better than precept.
- (b) The dramatic art in Kerala.
- (c) Influence of climate on character.
- (d) The social value of religious festivals.

KANARESE VERNACULAR

Paper-setter and Examiner—MR. P. APPAJI RAO, B.Sc.

Candidates are required to give their answers in their own words in Kanarese as far as practicable

The figures in the margin indicate full marks

1. Translate the following passage into Kanarese:— 15

On certain proposals made by the Government of India for the establishment of a gold standard in India, a committee was appointed in 1898 to recommend on Indian financial conditions. The committee recommended that the Indian mints should continue closed to the unrestricted coinage of silver and should be opened to the unrestricted coinage of gold; the sovereign should be made legal tender and current coin; the ratio between the sovereign and the rupee should be £1 = Rs. 15, or Re. 1 = 1s. 4d.; the profit on the coinage of rupees should be held in gold as a special reserve. The committee thus contemplated the introduction of the gold standard and gold currency in India, but since 1899 the Government of India has drifted into a monetary standard which has been called the *gold-exchange standard*, owing mainly to the opposition of the British Treasury, and India has had to be satisfied with a rupee which was nothing more or less than a silver note for 1s. 4d. gold.

2. Write an essay in Kanarese on any *one* of the following subjects:— 20

- (a) The efficacy of self-sacrifice in public life.
- (b) The Disarmament Conference and its achievements.
- (c) The sugar industry in India at the present time and its future.
- (d) Describe the methods adopted in climbing over the Himalayas and especially Mount Everest.

3. Write a letter to your friend in about 180 words telling him what profession you are going to follow, and your reasons for choosing that particular line in preference to other lucrative lines. 9
4. Explain why the title of Chhatrapati was conferred on Sivaji, with reference to your text (in Kanarese). 10
5. Describe briefly the story of Pancha Ratra. 10
6. Quote a few telling lines from *Kavya Sāra* to show the grandeur and majesty of thought running in the author's mind. 20
7. Re-write the following in modern prose, and explain all the difficult words:-- 16

ಇಂತತ್ಯಂತ ಸಾಹಸದಿಂದಾ ಕೋಂಟಿಯಂ ಕೊಂಡನಂತರಮಾ ಕೋಂಟಿಯಂ ಬಲಿಸಿಯದಕ್ಕೆ ಭುವನಗಿರಿಯ ದುರ್ಗಮೆಂದು ನಾಮಾಂಕಿತಮಂ ರಚಿಸಿ ಹಿಂತೆ ತಮ್ಮ ಜನಕ ದೊಡ್ಡಸಂಕಣನಾಯಕಂ ಕಾಶೀಕ್ಷೇತ್ರದಿಂ ತಂದ ದಿವ್ಯಲಿಂಗಮಂ ವಿಶ್ವೇಶ್ವರಲಿಂಗಮೆಂದಾಗಮ ವಿಧಾನದಿಂದಾ ಕೋಂಟಿಯೋದ್ಭವತತ್ವಯಂ ರಚಿಸಿ ಶಿಲಾಮಯಮಾದ ದೇವಸ್ಥಾನಮಂ ಕಟ್ಟಿಸಿ ಭೂಸ್ವಾಸ್ಥ್ಯಯಂ ಧಾರೆಯನೆರೆದು ತತ್ಪೂಜಾದಿ ವಿಭವಂಗಳಂ ನಡೆಯಿಸಿ ಮತ್ತಮಾ ದುರ್ಗದೊಳು ಚಿತ್ಸಾನ್ಯಂಗಳೋಳ್ ಪರಿವಾರ ದೇವತೆಗಳಂ ಪ್ರತಿಷ್ಠೆಗೈಸಿ ನಿಜ್ಜ ತದರ್ಚನೆ ನಡೆವಂತು ನಿಯಾಮಕಂಗೆಯ್ದು ಮತ್ತಮಾ ಕೋಂಟಿಯೊಳುತ್ಕೃಷ್ಟಮಾದರಮನೆಯಂ ಕಟ್ಟಿಸಿ ಭಂಡಾರ ಜನಶಾಲಿ ಯುಗ್ರಾಣ ಪಣತವಾನೆಯ ಮಹಲು ಕುದುರೆಯ ಲಾಯ ಮುಂತಾದ ಮಹಲುಗಳಂ ನಿರ್ಮಾಣಂಗೆಯ್ದು ಮತ್ತಮಾ ಕೋಂಟಿಯ ಹೊರಗಡೆಯೋಳ್ ಕಲ್ಯಾಣಮಹಲೆಂಬ ಬೆಟ್ಟದರಮನೆಯಂ ಕಟ್ಟಿಸಿ, ಮತ್ತಮಗ್ರಹಾರ ಮಹತ್ತಿನಮಠ ಶೃಂಗೇರಿಮಠ ಪೇಟೆ ತಲವಾರಗಟ್ಟಿ ಕೆರೆತೋಟಗಡ್ಡೆಗಳಂ ನಿರ್ಮಾಣಂಗೆಯ್ದು ತತ್ತತ್ಪಾನ್ಯಂಗಳೋಳ್ ಗ್ರಾಮಾಧಿದೇವತೆಗಳಂ ನೆಲೆಗೊಳಿಸಿ ಪೊರಗುಕ್ಕುಡಮನೊಡ್ಡುಗಳಂ ಬಲಿಯಿಸಿ ರಚನೆಗೈಸಿದನಂತುಮಲ್ಲದೆಯು ||

TAMIL VERNACULAR

Paper-setter and Examiner—MM. VEDANTAVISARAD N. S. ANANTAKRISHNA
SASTRI.

Candidates are required to give their answers in their own words as far as practicable.

Any SIX questions should be answered.

1. திருக்குறள் நாற்பதாவது முதல் ஜம்பது வரையும்த்தியாயங்களின் பெயரையும் அவற்றின் பொருளையும் எழுதுக.

2. கம்பராமாயணத்தின் மகிமை மையை அயோத்திகாண்டம் முதல் மூன்று படலங்களையொட்டி விளங்கச் செய்யவும்.

3. திருக்குறளில் கேள்விக்குபிறகு அறிவுடைமையும், பெரியாரைத்துணைக் கேடலுக்குப்பிறகு சிற்றினம் சேராமையையும், தெரிந்து செயல்வகைக்குப்பின் வலியறிதலையும் வைக்கக் காரணங்களை விரையவும்.

4. கம்பராமாயணத்தினையோத்தியாகாண்டம் மூன்றும்படலத்தின கதையின் வரலாற்றை விவரித்து எழுதவும்.

5. அடியிற்கண்ட சொற்களின் பொருளையும் அச்சொற்களடங்கிய குறள்களையும் எழுதவும்: (a) ஒற்கத்தின. (b) பேணி. (c) ஏதப்படாது. (d) அமைந்து ஞாலம்.

6. அடியிற்கண்ட குறள்களை பதவுரை தெளிவுரைகளுடன் எழுதவும்.

(a) எள்ளாத வெண்ணி.

(b) பல்லார் பகைகொளலிற்.

(c) செவியிற் கவையுணரா.

7. கம்பரும் திருவள்ளுவரும் என்பதை யொட்டி யோர் நீண்ட வியாஸம் எழுதவும்.

8. Translate into Tamil the following passage:—

The most mysterious and inaccessible section of Brazil is what is known as the basin of the Amazon. Even aeroplanes cannot land on the thick, monotonously uniform belts of primeval jungle which go to form the greater part of it. Although the Amazon extends for more than 3,500 miles from its source at Lake Titicaca, in Peru, to the point where it flows into the Atlantic Ocean, it is not the longest river in the world, both the Mississippi and the Nile taking precedence in this respect.

In width, however, it is without rival, being about two hundred miles broad at its several mouths and varying up to six miles wide inland.

Its basin is also the largest in the world—expanse of nearly two and a half million square miles.

At the time of the floods much of the forest is under water. Big pieces of rush covered earth get torn away from their slender hold at the side and come floating down stream.

Thus, floating islands are frequently seen, as are also numerous logs that dive and roll so much in their progress that they are frequently mistaken for alligators.

ORIYA VERNACULAR

Paper-setter—RAI SAHEB ARTTABALLABH MAHANTI, M.A.

Examiner—MR. MAHESWAR DAS, M.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into Oriya any one of the following passages:— 15

(a) In the conduct of life the great matter is to know beforehand what will please us, and what pleasure will hold out. So far as we know this, our choice will be justified by the event. And this knowledge is more scarce and difficult than at first sight it may seem to be; for sometimes pleasures which are wonderfully alluring and flattering in the prospect, turn out in the possession extremely insipid, or do not hold out as we expected; at other times, pleasures start up which never entered into our calculation, and which we might have missed by not foreseeing them; whence we have reason to believe that we actually do miss many pleasures from the same cause.

(b) We are even now beginning to see that there is no faith, however degraded, which does not contain some ray of light and truth; no creed, however pure and exalted, which has not passed through many phases of existence, and gathered to itself additions of which it may well be rid. A religion, even if revealed, must be communicated to man, and handed down through human channels; its outward form, therefore, will be shaped and moulded by the changing years, and be subject to all the conditions of growth and decay. It will be conformed not only to the necessities of time and place, but also to the character and instinct of the races by whom it is professed.

2. Briefly sketch the character of *either* ବାଦଲ ସ୍ଥିତି

or ଅଳବଦି ଶି ।

3. Write a note on—

10

either ସାଧନା ଓ ସୃଷ୍ଟି

or ଜାତୀୟ ଜୀବନରେ ସାହିତ୍ୟର ସ୍ଥାନ

after the author of *Bibidha Prabandha*.

4. Write a critical appreciation of *either* ବିଦ୍ୟାପତି
or ଇନ୍ଦୁଧ୍ୟମ୍ନ ।

5. Explain any *three* of the following:—

15

(a) ଆହେ ଦେବଦେବ, ତବ ଦରଶନେ

ତବ ଗୁଣଗୁଣି-ଶ୍ରବଣ-ମନନେ

ଭବସନ୍ତରଣ ଇପାୟ ଜନମେ, ତୁଟିଲ କର୍ମବନ୍ଧନ ।

ପାପ ପୁଣ୍ୟ ଦୁହେଁ ହୁଅନ୍ତେ ସମ୍ବିତ,

ହୃଦୟରୁ ହୁଏ ସମୟ ଛେଦିତ,

ହୁଏ ଜ୍ୟୋତିର୍ମୟ ଜ୍ଞାନ ସମ୍ବଦିତ ପୋଡ଼ାଇ କର୍ମ ଲବନ ॥

(b) ଅଭିଳଷିତ ବିଷୟେ ପରମାବେଶ ଉଦୟେ

ସଞ୍ଚିତ ପ୍ରେମର ଦୃଷ୍ଟି ନଗାରିହୁତ,

କୃଷ୍ଣେ ପରମ ଆବେଶ, ତାର ପ୍ରାପ୍ତି-ଅଭିଳାଷ,

କରେ ସେ ଚିତ୍ତ ଚକ୍ରକଣ 'ଭାବ' କାମିତ,

ସ୍ବଳ୍ପ ଅଶ୍ରୁ ପୁଣି ପୁଲକ, ଜନ୍ମାଏ ଭାବୁକେ ହରିଗୁଣ-ମୋଦକ ।

(c) ମନୁଷ୍ୟ ଯେତେବେଳେ ସର୍ବପ୍ରକାର ବନ୍ଧନମୁକ୍ତ ହୋଇ
ଅନ୍ତର୍ନିହିତ ବିବେକର ପରମେଶ୍ଵର ଅନୁଗ୍ରାହେ କାର୍ଯ୍ୟ କରିବାକୁ ଶିକ୍ଷା
କରେ, ସେତେବେଳେ ତାହା ଉପରେ କୌଣସି ପ୍ରକାର ଅସ୍ପଷ୍ଟତା
ରହେ ନାହିଁ । ଦେଶର ଗୁଣବିଧି ତାହା ପାଇଁ ନୁହେଁ । ପୃଥିବୀର
ଧର୍ମଶାସ୍ତ୍ରର ବିଧି ମଧ୍ୟ ତାହାର ଲୋଡ଼ା ନାହିଁ । ସକଳ ବିଧି ତାହାର
ହୃଦୟରେ । ଯାହା ସେ ହୃଦୟର ନିରୁପସ୍ଥାନରେ ନ ପାଏ, ସମସ୍ତ
ପୃଥିବୀ ସମସ୍ତରରେ ତାହା ପ୍ରସ୍ତର କଲେ ସୁଦ୍ଧା ସେ ଗ୍ରହଣ କରିବ
ନାହିଁ ।

(d) ଅଶାନ୍ତ ପ୍ରତିତପ୍ତ ହାର ମାନବ ରବିଷ୍ୟତ୍ ଅନ୍ଧକାର
ମଧ୍ୟରେ ଅପଣାର ପ୍ରାପ୍ୟ ଅନେକ ସୁଖଗୁଣି ନିହିତ ଦେଖିପାରେ ।
କଷ୍ଟଦାୟକ ଦୁଃଖମାନ ସେ ଦେଖିବାକୁ ନିତାନ୍ତ ଅନିଚ୍ଛୁକ । ଆହୁର
ମଧ୍ୟ ମାନବ ଯାହା ପ୍ରାପ୍ତ ହେବା ପାଇଁ କୃତକ୍ଷୟ ହୋଇ ବସିଥାଏ

ତାହା କାହିଁ ଶୂନ୍ୟମୟ ଆକାଶରେ ବିଲୁପ୍ତ ହୋଇଯାଏ, ଠିକ୍ ସେହି ସମୟରେ ପୁଣି କଳ୍ପନାଜ୍ଞତ ଘଟନାମାନ ସଂଘଟିତ ହୁଏ । ମାନବ ଜୀବନରେ ଏପରି ଅସଂଖ୍ୟ ଘଟନା ପ୍ରତ୍ୟକ୍ଷ କରି ମଧ୍ୟ ବିମୁଗ୍ଧ ।

6. (a) Write sentences to illustrate the use of any *five* of the following words:— 5

ମାଦାର, ତାବେଦାର, ପୟୂଦଳ, ମାସହରା, ଅମାନିଆ, ମହଲୁକ, ବ୍ୟତ୍ୟୟ ।

(b) ଘର, ଦାଢ଼, ପାଣି, ଗାଁ, ଶାଗ. Write the adjective forms and construct sentences with them. 5

7. Re-write the following correcting all errors:— 10

ସାମୟିକ ପାଟିଯୋଷୀ ବିଷାଳ ମନୋକାଞ୍ଚରେ କାଳକ୍ଷେପିତ କରୁଛନ୍ତି ପୁଣି ତାଙ୍କ ହୃଦୟୀ ପଡ଼ୋଷୀ ସକର ଦାସେ ବିସେଷଣ ଠାକୁରାଣୀଙ୍କ ସୁନ୍ଦର ପତରରେ ଭର୍ତ୍ତିକର ତାଙ୍କ ସାହିତ୍ୟରେ ପ୍ରବେଶ ହେଲେ ଓ କହିଲେ ପାଟିଯୋଷୀ ଏହି ସୁନ୍ଦର ସାହାର୍ଯ୍ୟରେ ସବୁ ମନୋପିତା ମିଳାଇ ଯିବ । ଅଜନ୍ମରୁ କେହି ଅବଛନ ସୌଖ୍ୟଭୋଗ ଦେନ ପ୍ରତିଶ୍ରୁତିରେ ଭ୍ରମିଷ୍ଠ କରନ୍ତି ନାହିଁ । ଆପଣ ଯଶେ ଶ୍ରୀବନ୍ତ ପୁରୁଷ ।

8. Write an essay on any *one* of the following subjects:— 20

(a) ଅସ୍ତ୍ର, ଶ୍ୟାମା-ନିବାରଣ

(b) ପ୍ରାଚୀନ ଉତ୍କଳର କଳା ଓ ସାହିତ୍ୟ

(c) ଜୀବନ ଚରିତ୍ରପାଠର ଉପକାରିତା ।

MODERN TIBETAN

Paper-setter and Examiner—DR. SATKARI MUKHERJEE, M.A., PH.D.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate the following passage into Modern Tibetan:— 40

It has often struck me that we of the western world have contracted our outlook by failure to take in the full significance of the development of reflection on ultimate things in India. There the modes of thought may indeed have been too pictorial to satisfy the requirements of the methods employed in exact science, even in matters speculative. But in the course of her eastern development that has emerged which has been more than merely pictorial. I have never been in India and am not likely now to go there. But in my later years I have studied her philosophical literature, and I have had many native friends there, some of them men of learning who have been thorough students of our thought as well as of their own. There is in Bengal particularly a philosophical outlook which has moulded even Indian political aspirations, among Mohammedans as well as among Hindus. The exponents of this outlook have come to talk with me in London and in Scotland for years past. We seem hardly to realize how much of a suggestive spirit of their own they have to bring to us, a spirit which may not always assume a very practical form, but yet is one that ought to be taken into account at every turn by those responsible for seeking practical reforms in the system of Indian government. For want of knowledge has brought in its train want of sympathy. Without such sympathy we may well continue to succeed in 'policing' India, but it is difficult for us to gain the confidence of the Indian people. The finest level of Indian thought is not really difficult to understand, however difficult it may be to interpret the practical aspirations of the people out there. For it is the soul of that people that is the key to their outlook. The preliminary study that is desirable for the would-be Indian reformer is neglected excepting by a very few, and is neglected mainly because of the difference in spirit between the east and the west.

2. Who is the principal heroine in the *Do-wa-zan-mo*? Give a critical estimate of her character. 10

3. What is the underlying motive in the stories of the *Pag-sam-phi-shin*? Illustrate from any story or stories any two moral perfections attained by the Buddha. 10

4. Conjugate any three of the following roots in the past and future tenses and in the imperative mood and give

illustration of any one form:—འགྲུག་པ། གོན་པ། གཤམ་པ། རྒྱུག་པ།

and འཇམ་པ།

10

5. Write a short explanatory dissertation, taking the idea of the following as your subject:— 10

འཇམ་པ་ལ་བཞུགས་པའི་ལྟ་སྟངས་ལ། རྒྱུག་པ་ལ་བཞུགས་པའི་ལྟ་སྟངས་ལ།

འཇམ་པ་ལ་བཞུགས་པའི་ལྟ་སྟངས་ལ། རྒྱུག་པ་ལ་བཞུགས་པའི་ལྟ་སྟངས་ལ།

6. Write a short essay in Modern Tibetan on *either* of the following:— 20.

(a) The blessings of education are internally felt, and external success is but an accident.

(b) Patriotism is but a stepping stone to universal love.

PORTUGUESE VERNACULAR

*Paper-setter and Examiner:—*DR. P. D. BRAGANCA CUNHA

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

All questions to be answered in Portuguese.

1. Discuss the Romantic School of Herculano and his contemporaries, and compare it with the Realistic School of Eça de Queiroz. 40.

2. Write what you know about Anthero de Quental's poetry, giving examples of his deep love for Truth. 30

3. Write a short essay tracing the causes of the decadence in Portuguese literature after the Great European War. 30.

BURMESE VERNACULAR

Paper-setter and Examiner—PROF. PE MAUNG TIN, M.A.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. ဦးပုညသည် ဝတ္ထုရေးခြင်းနှင့် ဓမ္မောစာရေးခြင်းတို့တွင် 10
မည်သည့် ခွဲသာ၍ ချီးမွမ်းထိုက်ကြောင်း အကိုးအကားနှင့် ဖြေပါ။

2. အောက်ပါစာပိုဒ်တို့ သည် မည်သည့် စာကိုယ်နှင့် စပ်ဆိုင် 30
သနည်း။ ၎င်းတို့၏ အဓိပ္ပါယ်ကို သင့်စကားဖြင့် ရေးပါ။

(က) စိန်ရတနာ၊ ဂန္ဓာလတိုင်၊ ယွန်းတို့ဂိုဏ်းနှင့်၊ နက်ရှိုင်းသူမ
ရှင်၊ ပံ့ပိုးပေးသော၊ လူနတ်မကြို၊ ကမ္ဘာလုံးဖြင့် နှိပ်စက်စွာ၊ ကမ္ဘာ
နှစ်သော၊ ကြုံနှစ်သော်စင်၊ ငွေချော်ပင်ကဲ့သို့၊ ဖြူဖြူမချယ်၊ ထင်
တတ်သန်ရှင်စွာ၊ ယာနပ်ညာဏ်၊ နာမကျန်လက္ခ၊ ပသာဒတို့နှင့်၊
အောင်ပကုလား၊ ရွှေသားမိတ်တူ၊ နံညွန့်ကိုချွတ်တတ်သော၊ ကြာမြူ
ထောတသပ်။

(ခ) ကြိတ်ဖုတ်ဖြင့် သွေးမှယိုစဖွယ်။ ။ ဖြူနီဝါပြာတရနှင့်၊ ခရု
ထွေလာဆန်း၊ ကမ်းကျွေပတ်ထယ်။ ။ ရွှေမင်တံဆိပ်ပျော်နှင့်၊
ဟန်ချပ်ပြသွယ်သွယ်၊ နတ်မယ်လျှပ်ဆီထိုး။ ။ ဝင်ကစွတ်၊ မြင်ထွက်
ကကြည်တို့ရာ၊ ယိုသိုလာသည်သို့သွားနှင့်၊ အငှါးခန္ဓာမြှောင်ရထယ်။

(ဂ) ခုနယ်များကို၊ ဘုရားမုနီ၊ ထိုက်တော်တိုင်ရှိဘိမူ၊ လော
တိထုပ္ပတ်၊ လူတို့ဇာတ်ကို၊ သိတတ်သသူ၊ မောင်ဆန်းလှ၍၊ လူတော်
ဒဂ်၊ ရွှေခွက်ဆွဲစာရင်းဝင်၊ ချည်ခင်စွပ်မိတ်၊ ပုဂ္ဂိုလ်တဦးဖြစ်ပေ
မည်။ လောကီလူဖြေ၊ အနေအရံ၊ လူ့ဖြစ်ပုံကို၊ သိရုံနှင့်မတန်၊
တဗျာဉ်အာဘော်ကလည်း၊ ကလေးတိုင်းတွက်သောကြောင့်၊
နှစ်သက်ပြီးမွမ်းလောက်ပေသည်။

3. အောက်ပါစာပိုဒ်၏အဓိပ္ပါယ်ကိုသင့်စကားဖြင့်ရေးပါ။ 15

ရွှေထဲထွက်ဖို၊ မြိုင်ညိုညိုမှာ၊ မောင်တကိုယ်ပန်း၊ ဘယ်ဆီရှိ
 နေ၊ နေပြည်ထောင်ကို၊ ရေငုံလိုသာရမ်းရတယ်။ ထက်ပန်းပေါက်
 ခတ်၊ ကိတ္တပတ်မျိုး၊ နတ်လဗ္ဗရာ၊ စည်တံမြှာထဲ၊ ဖြည်ဝါသံဖြင့်ညောင်း
 တော့တယ်။ မြိုက်ထရော၊ ကြယ်မင်းပြုထို၊ ဓမ္မရယ်ရွှေ့ပြင်၊ ငွေ
 ထွန်းရား၊ ထုန်ရထားနှင့်၊ အသွားငယ်ဆိုင်သည်၊ နှစ်မြိုင်ထွင်ထို
 ဓမ္မဝင်းတော့တယ်။ နံကိုင်းဇေယျာ၊ ယမုန်ထက်ရန်၊ ကြက်နှစ်နန်း
 ဆီက၊ ရှက်သန်းငယ်ဖြာသည်။ မိတ္တူညိုဆင့်လောင်းထိပ်မယ်။

1. Translate into Burmese:—

15

Since you have written to me with the attention and tenderness of ancient time, your letters give me a great part of the pleasure which a life of solitude admits. You will never bestow any share of your good-will on one who deserves better. Those that have loved longest, love best. A sudden blaze of kindness may, by a single blast of coldness, be extinguished; but that fondness, which length of time has connected with many circumstances and occasions, though it may for a while be suppressed by disgust or resentment, with or without a cause, is hourly revived by accidental recollection. To those that have lived long together, everything heard and everything seen recalls some pleasure communicated or some benefit conferred, some petty quarrel, or some slight endearment. Esteem of great powers, or amiable qualities newly discovered may embroider a day or a week; but a friendship of twenty years is interwoven with the texture of life.

5. ဦးပုညမေတ္တာစာများအနက်၊ မည်သည့်မေတ္တာစာကိုအနှစ်
 သက်ဆုံးနည်း။ အထောက်အထားနှင့်တကွဖြေပါ။

6. အောက်ပါအကြောင်းအရာထရုကိုစာစီကိုရေးသားပါ။— 20

(က) ဖြန့်မာစာ။

(ခ) ရွှေတာမြင်း။

(ဂ) ထိုင်းရေးပြည်ရေး၊

SANSKRIT—HONOURS

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FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. State the arguments advanced by Uddhava for the refutation of those of Balarāma. 9
2. Translate *one* of the following groups into English.— 10

GROUP A

(a)

निजौजसौज्वासयितुं जगद्गुह्यमपजिह्वीया न महीतलं यदि ।

समाहितैरप्यनिष्पितस्ततः पदं दृश्यः स्याः कथमौश मादृशाम् ॥

(b) स्वयं प्रणमतेऽप्येपि परवायासुपेयुषो ।

निदर्शनमसाराणां लघुर्वद्वद्वत् नरः ॥

GROUP B

(a)

अथोपपत्तिं कलनापरोऽपरामवाप्य शैलूष इवैष भूमिकाम् ।

निरोहितात्मा शिशुपालसंज्ञया प्रतीयते सम्प्रति सोऽप्यसः परैः ॥

(b) उपायमास्थितस्यापि नश्यत्यर्थः प्रमादतः ।

{ इन्ति नीपानयस्योऽपि शयालुर्ष्य गयुर्ष्य गान् ॥

(i) Account for वही विभक्ति in जगद्गुह्यम् and for आत्मनेपद in-

(ii) Expound the *saṃśa* in परवादी stating the reasons for your answer 2

(iii) Write grammatical notes on समाहितः । 3

3. Explain in Sanskrit the following extracts, adding grammatical notes on निदाघधामानम्, मुनिम्, विषत्, अधिश्रितशिशौ, and पुष्करीकाचः । 1

निदाघधामाननिवाधिदीर्घितं मुदा विकाशं मुनिमभ्युपेयुषी ।

विलोचने विधदधिश्रितशिशौ स पुष्करीकाच इति स्फुटोऽभवत् ॥

4. निरुद्धवैवधासारप्रसारा गा इव व्रजम् ।

उपरन्धन् दाशार्हाः पुरीं माहिभर्तौ विषः ॥

Change the voice in उपरन्धन् with necessary changes in the above śloka. 6

5. Amplify the following idea with reference to the context :— 6

अथवावलमारम्भा निदानं चयसम्पदः ।

6. Reconcile उपाध्यायान्दशाचार्य आचार्याणां शतं पिता with उत्पादकब्रह्मदातात्मनो-रीयान् ब्रह्मदः पिता । 6

7. Explain fully, giving illustrations in each case :— 10

वर्षधर्मश्चन्द्र्य वर्षधर्माग्रधर्मवर्णाग्रधर्मगुणधर्मनैमित्तिकधर्माणामुपलक्षकम् ।

8. Translate any two of the following extracts into English :— 10

(a) पूजयद्दशनं नित्यमशौचैतदकुलस्यन् ।

दृष्ट्वा हृष्येत् प्रसौद्वेच प्रतिनन्दे च सत्त्वशः ॥

(b) तथीरनुपगमेन पारक्यं यद्यदाचरेत् ।

तत्तन्निवेदयेत्तन्मयीवचनकर्मभिः ॥

(c) नारुनुदः स्यादात्तोपि न परद्रोहकर्मधीः ।

यथास्त्रीद्विजने वाचा नालीक्यां तामुदीरयेत्

9. Translate into Sanskrit :—

25

(a) The husband and wife looked and rubbed their eyes and looked again in wonder. Where but a few minutes since had stood a village with its many houses, there was now a lake sparkling in the morning sunlight. The wicked people and their dwellings had all been destroyed.

(b) Indra, the god, who had worked the wonder, turned with a smile to the astonished couple. 'My good people', said he, 'you alone of all the village have been saved and your humble cottage I have changed into a temple of the gods. Before I leave the place ask any favour you choose and it shall be granted.'

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. *Either*, Describe the episode of *Śakuntalā* as narrated in the epic *Mahābhārata* and point out the important modifications made by कालिदास, particularly to account for the शकुन्ता's repudiation by दुष्यन्त about which the epic is silent, showing also how those modifications serve admirably the dramatic purpose. 10

Or, Describe the career of मागुरायण in the *Mudrārākṣasa*, specially noticing the part played by him in the camp of Malaya-ketu which brought about an estrangement between him and Rākṣasa. Describe at the same time the manner in which Rākṣasa was caught in the snare so cunningly laid by Cāṇakya. 10

2. Explain *either* in English *or* in Sanskrit any *two* stanzas, selecting *one* only from each of the following groups, with reference to the context in each case — 12

GROUP A

- (a) सुविश्वं रङ्गैः पथिषु विषमेष्वप्यचलता
चिरं धृत्यैशोढा गुरुपि भुवो यास्य गुरुणा ।
धुरं तामेवोच्चैर्नववयसि वोदु व्यवसितौ
मनस्वी दम्यत्वात् खलति च, न दुःखं वहति च ॥
- (b) अपामुहृत्तानां निजमुपदिशन्त्या स्थितिपदं
दधत्या शालीनामवनतिमुदारं सति फले ।
मयराणामुग्रं विषमिव हरन्त्या मदमहो
कृतः कृत्स्नस्याय विनय इव लोकस्य शरदा ॥

GROUP B

- (a) प्रत्यादिष्टविशेषमखण्डनविधिर्वामप्रकाशार्पितं
विषत्काञ्चनमेकमेव वलयं शालीपरक्ताधरः ।
चिन्ताजागरणप्रतामनयनक्षेत्रीगुणैरात्मनः
संस्कारोद्भिद्धिती मङ्गमणिरिव क्षीणोऽपि नालस्यते ॥
- (b) अतिभिन्नमोहतमसो दिष्ट्या प्रमुखे स्थितासि मे समुखि ।
उपरागान्ते शशिनः समुपगता रोहिणी योगम् ॥

(i) In extract (a) under Group A, derive वृथैश्च and उदा ।
Comment on क्त in व्यवसितः । 4.

In extract (b) try to bring out the suggestive sense contained in the first two lines.

(ii) In extract (a) under Group B, account for स् in the word संस्कार, and analyse the compound चिन्ताजागरणप्रतापनयनः । 5

In extract (b) bring out the double sense of तमः and उपराग ।
Parse दिव्या ।

3. Either,

मुद्रा यस्य कराङ्गुलिप्रणयिनो सिद्धार्थकस्तत्सुहृत्
तस्यैवापरलिख्यसूचितमिदं लिख्यं प्रयोगाश्रयम् ।
सुव्यक्तं शकटेन भेदपटुभिः सन्धाय सार्द्धं परै-
र्भर्तृखेदपराङ्मुखेन क्लृप्तं प्राणार्थिना चेदितम् ॥

Who spoke this stanza and when ?

Write down in your own words in English what you know about the document (लिख्य) and the seal (मुद्रा) referred to in this stanza, stating also the plot by which शकटदास came to be involved in this affair. How did the seal and the document come to reach the hands of सिद्धार्थक ? 12

Or, Describe fully the successive clues leading to the recognition of शकुन्तला by दुष्यन्त in the last act of the drama, not failing to point out how each successive discovery of new clues proved of more and more increasing significance to the king. 12

4. Translate into English any two of the following extracts :— 10

(a) परार्थानुष्ठाने रह्यति नृपं स्वार्थपरता

परित्यक्तस्वार्थो नियतमयथार्थः चित्तिपतिः ।

परार्थहेतुः स्वार्थादभिमततरो ह्यन परवान्

परायणः प्रीतिः कथमिव रसं वेत्ति पुरुषः ? ॥

- (b) अस्मात् परं वत यथास्मृतिं संज्ञितानि
 को नः कुले निवपनानि करिष्यतीति ।
 नूनं प्रसूतिविकलेन मया प्रसिक्तं
 चौतास्मृशेषमुदकं पितरः पिबन्ति ॥
- (c) द्रव्यं जिगीषुमधिगम्य जडात्मनोऽपि
 नेतुर्यंश्चिन्ति पटे नियतं प्रतिष्ठा ।
 अद्रव्यमेत्य भुवि शुद्धनयोऽपि मन्वी
 शीर्षायथः पतति कूलजहचहन्त्या ॥

Account for the विभक्तis in स्वार्थात्, अस्मात् and द्रव्यम् in the above stanzas. 3

5. Expand the ideas contained in any *three* of the following extracts, mentioning the contexts in each case:— 5

- (a) दैवोपपन्नस्य बुद्धिरथवा सर्वो विपर्यस्यति ।
 (b) आकारसदृशं चेष्टितमेवास्य कथयति ।
 (c) गतिः सीच्छायाणां पतनमनुकूलं कलयति ।
 (d) प्रायो भृत्याभ्यजन्ति प्रचलितविभवं स्वामिनम् ।
 (e) विदांसोऽपि अविकल्पना भवन्ति ।
 (f) न निप्रयोजनमधिकारवन्तः प्रभुभिराह्वयन्ते ।

6. Your text contains a faithful and accurate description of optical changes produced upon external objects:— 10

(i) When a man is looking at them sitting on a carriage moving at a very rapid rate.

(ii) When a man in an aerial car is descending upon the earth from a high elevation.

Reproduce these descriptions as minutely as you can.

7. Translate into Sanskrit:— 25

(a) The morning came. The king and all his ministers were seated, and vast crowds, of all ranks and from all parts of the country, were admitted to see the trial of Sītā. In came the queen, following after Vālmiki. Closely veiled, with head bent, hand folded, and tears in her eyes, she walked. A murmur of praise and delight broke from all the spectators. Little did any one there dream of what they would shortly see happen!

(b) In the days of this ruler, it was considered the right thing for every man, when he had finished educating his family—when his daughters were all married, and his sons well established in life—to say farewell to the world and retire to the forest, there to give the remainder of his life to prayer and the thought of God. This was considered to be the duty of all, whatever their station in life.

THIRD PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate any *two* of the following passages into English :— 30

(a) 'एवमनुग्रयते—पुरा किल भगवान् स्वर्लोकमधितिष्ठन् परमेष्ठीं विकाशिनं पद्मविष्टरे समुपाविष्टः सुनासीरप्रमुखैर्गोत्वाचैः परिठतो ब्रह्मोद्याः कथाः कुर्वन् अन्याथ निरवद्या विद्यागीष्ठीर्भावयन् कदाचिदासाक्षके । तथासीनश्च तं विभुवनप्रतीक्ष्य' मनुदक्षचाक्षुषप्रधृतयः प्रजापतयः सर्वे च समर्षिपुरःसराः महर्षयः सिधेविरे । केचिद्वचः कुतित्तुराः समुदचारयन् । केचिदपचितिर्भास्य यजुं व्यपठन् । अपरे विवृतक्रतुक्रियातन्द्रान् मन्वान् व्याचक्षिरे । विद्याविसंवादा-
कृताश्च तत्र तेषामन्यान्वस्य विद्याविवादाः प्रादुरभवन् ।

(b) सरस्वत्यपि श्रद्धा किञ्चिदधीमुखी-धवलकण्ठमारां कृष्णाजिनमेखलानिव दृष्टिमुखसि पातयन्ती सुरभिनिःश्वासपरिमललघुर्मूर्धैः शोपाचरेतिव षट्चरणचक्रैराकृत्यमाणा शोपश्रीकाःश्लिषितहस्ताधोमुखीभूतेन उपदिश्यमानमर्थ्य लोकावतरणमार्गेव नयनमयूखजालिन नूपुरव्याहाराङ्गतेर्भवनकलसकुलैर्ब्रह्मलोकनिवासिदृश्यैर्वानुगम्यमाना समं सावित्रा गृहमगात् ।

(c) एवमुक्ता मुक्ताफलधवललोचनजललवा सरस्वती प्रत्यवादीत्—प्रियसखि ! त्वया सह विचरन्त्या न मे किञ्चिदपि पीडामुत्पादयिष्यति ब्रह्मलोकविरहः शोपश्रीकी वा । केवलं कमलासनसेवासुखं आर्द्रयते मे हृदयम् । अपि च त्वमेव वेत्सि मे भुवि धर्मधामानि समाधि-
साधनानि योगयोग्यानि च स्थानानि स्थातुं—इत्येवमभिधाय विग्राम । रथरणकोपनीत-
प्रजागरा चानिमौलितलोचनैव तां निशामनयत् ।

2. Discuss the definition of *samāsa*, showing its difference from *vākya*. On what principle or principles would you classify the *samāsas*? Illustrate your answer with examples. 12

3. Write full grammatical notes on any *four* of the following :— 12

(a) कर्षप्रवचनीय । (b) प्रतिपदविधाना षष्ठी न समस्यते । (c) शेष in शेषे षष्ठी । (d) पु'बद्भाव । (e) गति ।

4. Correct or justify any *four* of the following stating full grammatical reasons :— 12

- (a) अनुसन्देते मन्सीदके ।
(b) विष्वनति वदद्भः ।
(c) अङ्गुलिषष्ठीपाः सादयति ।
(d) देवदत्तः अभिसेधयति गाः ।

(e) सा हि खलु विदितमक्तिर्माः महर्षेः कथयिष्यति ।

(f) सा निषाद प्रतिष्ठां त्वनमः शान्तिः समाः ।

(g) भाषाभिः क्रातिगभीरः ।

5. Under what conditions does the निजन्तमौ take चात्मनेपद ? Explain or state the case or cases when the roots कृन् or यस् take *ātmanepada*. 4

6. Discuss the age either of the *Mahābhārata* or of the *Rāmāyaṇa*. 10

7. Either, Discuss the meaning of the word *tantra* and the types into which it may be classified. 10

Or, Discuss the various theories of poetry.

8. Either, Give a clear and intelligent account of the prose romances and the *campūs*. 10

Or, Write an essay on the different types of the *purāṇas*.

FOURTH PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Either, What are the main characteristics of Kāvya literature in Sanskrit ? Under what class of Kāvya would you reckon Bhaṭṭi ? Give your reasons. 9

Or, Discuss the age and authorship of the *Bhaṭṭikāvya*, stating the grounds on which the different assumptions are based.

2. (a) Translate into English, adding explanatory notes where necessary, either (i) or (ii) :— 7

(i) वृद्धिचयस्थानगतमजस्रं वृत्तिं जिगीषुः प्रसमोचमाणः ।

घटेत सभ्यादिषु या गुणेषु लक्ष्मीं तं मुचति चक्षलापि ॥

(ii) क्रियासमारम्भगतोऽभ्युपायो वृद्धसम्पत् सद्देशकाला ।

विपन्नतीकारयुतार्थसिद्धिर्मन्वाङ्गमेतानि वदन्ति पञ्च ॥

(b) Conjugate the root of जिगीषुः in लुङ् (third person), and that of अभ्युपायः in लङ् (second person). 3

3. (a) Explain fully in Sanskrit either (i) or (ii) :— 8

(i) बहुवचनः परिमूढबन्धुवृष्टिप्रमिदोऽरिगणैरुपेतः ।

मा पादयुद्धं दिग्देन कार्ष्णिमं चितौन्द्रं प्रणतोपभोग्यम् ।

(ii) विरहसङ्कीर्णविपन्नभिन्नैः प्रचुचसंज्ञीणशितास्त्रहक्त्रैः ।

यावन्नराज्ञेन रिपुः शवाशान् सन्तर्पयत्यानम तावदस्य ॥

(b) Comment grammatically on the words underlined in (i) and (ii); and give the desiderative (सुनन्त) form of the root of प्रयत्न; and the frequentative (यङ्कन्त) from of the root of भिन्न in लट् (third person).

4

(c) Name and define the metre of 2 a (ii) and scan the verso.

3

4. Who was Mālyavān? Reproduce in your own words, in simple Sanskrit, his address to Rāvaṇa.

5

5. Give a brief account of the author of *Kūdambārī*, the time and style of its composition, and the origin of its plot. Name some other work of the same author.

9

6. *Either*, Give a short description of the hermitage and personality of the sage Jābāli, as narrated by the parrot in your text.

5

Or, Give a short synopsis of Śukanāsa's advice to Candrāpiṇa impressing upon his mind the futility of wealth and the frailties of youth.

7. Translate into English *either* (a) or (b) :—

10

(a) अह्नी प्रभावस्तपसाम् । इयमस्य शान्तापि मूर्धिरुत्तमकनकावदाता परिस्फुरन्ती सौदामनीव चक्षुषः प्रतिहन्ति तज्जासि । सततमुदासीनापि मद्भाप्रभावतया भयमिवोपजनयति प्रथमोपगतस्य । शुष्कलकाशक्रुसुमनिपतितानलचटुलहर्षा नित्यमसङ्घिष्ठ तर्पस्त्रिणां तनुतपसामपि तेजः प्रकल्प्य भवति किमुत सकलभुवनतलबन्धितचरणानामनवरततपःक्षपितमलानां करतलामलकफलवदखिलं जगदालीकयतां दिव्येन चक्षुषा भगवतामिर्विधानामवचयकारिणाम् ।

(b) यौवनारम्भं च प्रायः शास्त्रजलप्रचालननिर्मलापि कालुष्यमुपयाति बुद्धिः । अनुष्मिन्तधवलापि सरागैव भवति यूनां दृष्टिः । अपहरति च वात्येव शुष्कपत्रं समुद्भूतरीक्षान्तिरतिदूरमात्मेच्छया यौवनसमये पुरुषं प्रकृतिः । इन्द्रियहरिणहारिणी च सततमतिदुरन्तं यमुपभोगसुगदशिका । नवयौवनकसायितात्मनश्च सलिलानीव तान्येव विषयस्वरूपाण्यास्त्रायमानानि मधुरतराण्यापतन्ति मनसः ।

8. (a) Explain fully the simile in *either* (i) or (ii) :—

8

(i) चन्द्राभरणधत्तारकाकपालशकलालङ्कृतादम्बरतलात्पञ्चकीतमाङ्गादिव गङ्गा सागरानापूरयन्ती हंसधवला धरण्यामपतज्ज्योत्स्ना ।

(ii) अचिरप्रोषिते सवितरि शोकविधुरा कमलमुकुलकमण्डलुधारिणी हंससितदुकुलपरिधाना मण्डालधवलयज्ञापवीता मधुकरमण्डलाच्चवलयमुषहन्ती कमलिनौ दिनपतिसमागमव्रतमिवाचरत् ।

(b) Give the derivation of the words underlined in (i), and conjugate the root of यञ्ज in लिट् (first person), and that of सवितरि in लोट् (second person).

4

9. Translate into Sanskrit *one only* of the following extracts:— 25

- (a) Order is Heaven's first law ; and this contest,
Some are, and must be, greater than the rest,
More rich, more wise ; but who infers from hence
That such as happier, shocks all common sense.
Heaven to mankind impartial we confess,
If all are equal in their happiness:
But mutual wants this happiness increase ;
All nature's difference keeps all nature's peace.

(b) All work is God's work ; therefore no worker should ever grudge or grumble if his work is not pleasant or profitable. The very consciousness of having done something for God's sake, and with earnest devotion, is worth the whole treasure of the earth, and is an eternal source of joy.

FIFTH PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

SEVEN questions only are to be attempted, of which Question 1 is compulsory.

1. Render any *four* of the following into English, showing in brackets the original words after their equivalents in your translation :— 16

- (a) अस्य त्वे वा अजरा अस्य भानवः ।

सुसंहस्रः सुप्रतीकस्य सुद्युतः ।

भाल्वचसी अत्यन्तु न सिन्धवा-

ऽपि रजन्ते अससन्तो अजराः ॥

- (b) यस्य त्री पूर्णा मधुना पदान्

अक्षीयमाणा स्वधया मदन्ति ।

य उ जिघातु पृथिवीमुत द्याम्

एकी दाधार भुवनाणि विश्वा ।

(c) मि॒त्रस्य॑ च॒र्ष॒षी॒धृ॒तोऽ॒वो॒ दि॒वस्य॑ सा॒न॒सि ।
 दु॒र्घं चि॒त्रश्र॑व॒स्तमम् ॥
 अ॒भि यो म॒हि॒ना दि॒वं मि॒त्रो बभू॑व स॒प्र॒याः ।
 अ॒भि श्र॒द्धो॒भिः पृ॒थि॒वीम् ॥

(d) ऋ॒ता॒वरी॑ दि॒वो अ॒र्क॑र॒वी॒ध्या
 रे॒वती॑ रो॒दसी॑ चि॒त्रम॑स्यात् ।
 आ॒य॒ती॒म॒ग उ॒ष॒सं वि॒भा॒ती
 वा॒नमे॑षि द्र॒वि॒ष्मं भि॒च॒मा॒णः ॥

(e) अ॒चि॒ती॒ य॒ज्ञ॒क॒मा दै॒व्ये अ॒ने
 दी॒नैर्द॑क्षैः प्र॒भू॒ती पू॒रुष॑त्व॒ता ।
 दे॒वेषु॑ च स॒वि॒तम॑ग्नि॒षेषु॑ च
 त्वं नो॑ अ॒व सु॒व॒ता॒द॒ना॒ग॒सः ॥

(f) प्र॒जा॒प॒ते न त्व॑दे॒ता॒न्व॒न्वी
 व॒श्या जा॒ता॒नि प॒रि ता बभू॑व ।
 य॒त्कामा॑से जु॒हुम॑स॒मी अ॒क्षु
 व॒यं स्या॑म॒ प॒त॒वी र॒थी॒षाम् ॥

2. (a) Name and specify the characteristics of the metres of the Rks in Question 1. 14

(b) Re-write Rk (f) in the Pada form, and write a note upon its special feature.

3. Describe the nature and functions of the various deities addressed in the Rks of Question 1. 14

4. Write explanatory notes on :— 14

- (a) अक्र । (b) शम्भ । (c) अपधा ।
 (d) रघ्न । (e) कौरि । (f) पुरंधि ।
 (g) सुवृत्ति ।

5. (a) Paraphrase the following in classical Sanskrit according to Sāyaṇa, and write brief notes in English where different interpretations have been proposed by European scholars :— 14

न स स्त्री दक्षो वरुण भुतिः सा
 सुरा मन्युर्विभीदको अचित्तिः ।
 अस्ति ज्योत्स्नानीयस उपारे
 स्वप्नश्चेदमृतस्य प्रयोता ॥

(b) Write a short note on the *Purusha-sūkta*, pointing out its philosophic and historic importance.

6. (a) Translate into English :— 14

मित्री जनानिति नवर्चं षष्ठं सूक्तं वैश्वामित्रं वेष्टुमं मेवम् । मित्री मेव चतुर्गायत्रान्त-
 मित्यनुक्तमाशिका । आदितः पञ्च विष्टुभः शिष्टाष्टतस्त्री गायत्राः । मित्री देवता । अग्निहोत्रार्थं
 पयसि वर्षविन्दुपतने मित्री जनानित्यनया समिधमादध्यात् । सूत्रितं च । मित्री जनान्यातयति
 ब्रुवाण इति समिदाधानमिति ।

(b) Annotate all the important words and names occurring in the passage cited in (a) of this question, tracing as far as practicable the quotations contained in it.

7. Comment on the peculiar forms of Vedic grammar occurring in any four of the Rks cited in Question 1. 14

8. (a) Point out, with illustrations, the uses of the Vedic subjunctive. 14

(b) In what different ways is the infinitive expressed in the Vedic language? Give illustrations.

(c) Decline अज and give the aorist of कृ according to Vedic grammar.

9. 'As works of poetic art, too, they (the hymns of the *Rgveda*) deserve a prominent place in the world literature' (WINTERNITZ). Explain. 14

10. Describe the social conditions of Rgvedic India. 14

SIXTH PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

GROUP A (Grammar)

Answer any FOUR questions from GROUP A.

1. (a) Explain any *three* of the following *sūtras* with examples :— 15

- (i) स नपुंसकम् । (ii) कृत्यानां कर्त्तरि वा ।
(iii) भुवः प्रभवः । (iv) स्वाङ्गाच्चेतः ।
(v) विभाषा समीपे ।

(b) What necessitates the breaking up (योगविभाग) of the rule कृत्यानां कर्त्तरि वा ?

(c) Point out the distinction between जनिकर्त्तृः प्रकृतिः and भुवः प्रभवः with particular reference to the terms प्रकृति and प्रभव .

2. (a) Give the compound forms, stating important rules in every case :— 15

- (i) खग्याः पदम् । (ii) चन्द्रिष्य वरुणश्च ।
(iii) द्यौश्च पृथिवी च । (iv) रचसां सभा ।
(v) विष्णीः पश्चात् । (vi) शरदः समीपम् ।

(b) Why is the rule उपसर्गादनीत्यरः changed into उपसर्गाद्बहुलम् ?
Give the reason for your answer.

3. Comment on any *two* of the following :— 15

- (a) सर्वोऽयं कारकश्रृङ्गाः प्रतिषेधः, शेषे वष्टी तु स्यादेव ।
(b) संज्ञापूर्वकी विधिरनित्यः ।
(c) गतिकारकोपपदानां कृद्धिः सह समासवचनं प्राक्सुबुत्पत्तेः ।

4. (a) Elucidate :— 15

बहुलपद्व्याप्तात् कचिन्नित्यम्—कृष्णसर्पः । कचिन्न—रानी आमदग्नः ।

(b) Distinguish between :—

पुष्पेभ्यः स्पृहयति and पुष्पाणि स्पृहयति ।

महत्सीवा and महसीवा ।

हृत्वात्यर्थे पतति and हृत्वात्यर्थे पतति ।

5. (a) Account for the case-endings in the underlined words :— 15

वासनात् प्रेक्षते । अलं अनेष । पत्ये श्रुते ।
अति देवान् कृण्वः । नमस्कृत्वा वृत्तिहाय ।

- (b) Explain with reference to the rule :—

अनित्योऽयं गुणेन निबध्दः ।

- (c) How do you support प्रथमा in मातेव as in the expression
हरितकों मुञ्क्ष राजन् मातेव हितकारिणीम् ।

GROUP B (*Alankāra*)

Answer any FOUR questions from GROUP B.

6. Give a critical interpretation of *rasa* as conceived by the *ālaṅkārikas*. 10

Discuss whether it comes from within or from without ?

7. Explain सुखः संजायते तेभ्यः सर्वेभ्योऽपीति का चतिः । And show how causes apparently full of sorrows are likely to produce pleasant emotion in the mind. 10

8. Elucidate :— 10

(a) अतीऽस्य स्वप्रकाशत्वमखण्डत्वं च सिध्यति ।

(b) इतिहासकथीद्भूतमितरहा सदाशयम् ।

9. (a) Define and illustrate विशेषीकृति and निदर्शना ।

- (b) Comment on :— 10

तदल्पमपि नीपेक्ष्य काव्ये दुष्टं कथंचन ।

10. Name and illustrate the different varieties of Prākṛta mentioned by Daṇḍin. 10

— — — — —

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FIRST PAPER

*Candidates are required to give their answers in their own
 words as far as practicable.*

The figures in the margin indicate full marks.

1. Render freely into English, so as to bring out the full sense as
 clearly as possible, *one* from Group A and *one* from Group B. 6 × 2 = 12

GROUP A

(a) वेदः कृतिः सदाचारः स्वस्य च प्रियमात्मनः ।

एतच्चतुर्विधं प्राहुः साक्षादर्थस्य सत्त्वणम् ॥

b) नैत्यकी नात्यनध्यायी ब्रह्मसत्त्वं हि तत्त्वतः ।

ब्रह्माहुतिदत्तं पुण्यमनध्यायवषट्कृतम् ॥

- (c) नान्नाश्रये गुरो शिष्यो वासमात्यनिकं वसेत् ।
ब्राह्मणं चाननूचानि काङ्क्षन् गतिमनुत्तमाम् ॥

GROUP B

- (a) गतं तिरश्चीनमनूरुसारथे प्रसिद्धमूर्ध्वज्वलनं हविर्भुजः ।
पतत्यधी धाम विसारि सर्वतः किमेतदित्याकुलमौचितं जनैः ॥
- (b) स बाल आसीदपुषा चतुर्भुजो मुखेन पूर्वोन्दिमस्त्रिलोचनः ।
युवा करक्रान्तमहौधदुश्चकैरसंश्रयं सम्प्रति तेजसा रविः ॥

2. Explain in English, *two* of the following, by translating freely, and adding the context and short notes in each case:— $(1 + 5 + 3) \times 2 = 18$

- (a) उपकर्त्तारिणा सन्धिर्न मित्रेणः पकारिणा ।
उपकारापकारौ हि लक्ष्यं लक्षणमेतयोः ॥
- (b) नालम्बते देष्टिकतां न निषीदति पौरुषे ।
शब्दाद्यौ सत्कविरिव दयं विद्वानपेक्षते ॥

(c) धर्माविरोधिना कर्मकामावपि सेवितव्यौ— न तद्विरोधिना । तथा च गौतमः—
“न पूर्वोक्तमध्यन्दिनापरः क्लानफलान् कुर्याद् यथाशक्ति धर्मार्थकामैः” इति ।

3. Discuss in English or Sanskrit any *two* of the following:—
 $10 \times 2 = 20$

- (a) Reconcile धर्मं जिज्ञासमानानां प्रमाणं परमं श्रुतिः । with वेदोऽखिलो
धर्ममूलं श्रुतिशीले च तद्विद्वान् ।
आचारश्चैव साधूनामात्मनस्तुष्टिरिव च ॥

(b) Why should Śisupāla be punished by Kṛṣṇa according to the message delivered by Nārada ?

(c) How could Kṛṣṇa fulfil the wishes of the gods completely by going to the horse-sacrifice ?

4. (a) *Either*, Point ou the कर्तृपद of प्राहुः in Question 1 A (a). 3

Or, Point out the कर्तृपद of श्रुतम् in Question 1 A (b).

(b) *Either*, Derive अनूचानि or expound the samāsa in अनुत्तमाम् in Question 1 A (c) 3

(c) Derive *either* तिरश्चीनम् or ईक्षितम् (indicating the proper वाच्य) in Question 1 B (a). 3

(d) *Either*, What is the allusion in अनन्तरथे; in Question 1 B (a) ? 3

Or, What is referred to by नैत्यके in Question 1 A (b), and why is that नैत्यक ?

(e) *Either*, Explain fully why वपुषा is in द्वतीया in वपुषा चतुर्थं जः 3

Or, Discuss the neuter gender in असंशयम् .

(f) *Either*, Distinguish grammatically between पूर्वार्द्धे and पुर्वार्द्धे . 4

Or, Discuss grammatically the propriety of the usage उपकारापकारी हि.....लक्षणम् ।

5. *Either*, Name and explain the metre in गतं तिरश्चीनम् &c. 6

Or, Explain the terms श्रुति, गान, and मूर्च्छना as used in connexion with the music given out by the *vinā* of Nārada.

Or, Explain सदाचार, व्यावृत्ति, and विपदा सावित्री

6. Translate into Sanskrit A, B, and C:— 15 + 6 + 4 = 25

A

Listen, you, o prince. I was once in a previous birth the king of the heavenly musicians (*gandharvas*). My personal charms and melodious voice attracted everybody. I became inordinately proud. I moved freely in the celestial regions. One day I met Nārada on the way. I was in a hurry ; but the sage stopped me.

B

These (books) are friends that are never men with new faces ; they are the same in wealth and poverty, in glory and obscurity.

C

Happy the man, and happy he alone,
Who can call to-day his own.

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. *Filher*, Explain the plan devised by Cāpakya to bring about a rupture between Rākshasa and Malayaketu. 10

Or, Give the substance of the feigned quarrel between Cāpakya and Candragupta. What purpose does it serve ? 10

2. (a) क वयं क परीक्षमन्मयी सगशावेः सममेधितो जनः । 5

परिहासविजल्पितं सखे परमार्थेन न गृह्यतां वचः ॥

By whom and in what connexion is the *śloka* uttered ? What is its far-reaching effect ?

(b) Reproduce or give in Sanskrit the substance of the *śloka* containing the message of Kaṇva to Duṣyanta. 5

3. Translate into English any five of the following :— 20

(a) राजन् समिदाहरणाय प्रस्थिता वयम् । एष खलु काश्यपस्य कुलपतेः अनुमालिनीतीरम् आश्रमो दृश्यते । न चेदन्धकार्यातिपातः प्रविश्य प्रतिगृह्यतामातिथेयः सत्कारः ।

(b) सरसिजमनुविद्धं शैवलीनापि रम्यं
मलिनमपि हिमांशीलं लक्ष्मीं तनोति ।
इयमधिकमनीषा वल्कलीनापि तन्वी
किमिव हि मधुराणां मण्डनं नाङ्गतीनाम् ॥

(c) साक्षात् प्रियामुपगतामपहाय पूर्व्वं
चित्रार्पितामहमिमां बहु मन्यमानः ।
कीर्तीवह्नां पथि निक्कामजलामतीत्य
ज्ञातः सखे प्रणयवान् सगृह्णिकायाम् ॥

(d) सुखं श्री महाभाषी एसा अवरारुषा शालं श्रीसहो इमं आदकन्मसमए भववदा
आरीएण दिषा । एदं किल मातापितरा अप्पाणं च वज्जिअ अवरौ भूमिपडिअं च गेणइइ ।

(e) आस्वादितविरदशीणितशीचशीभां
सम्यक्कामिव कलां अश्लान्कनस्य ।
जम्भाविदारितमुखस्य मुखात् अमुरनीं
को हन्मिच्छति हरिः परिभूय दंढाम् ॥

(f) परार्थानुष्ठाने रंजयति शृपं स्वार्थपरता
परित्यक्तस्वार्थो नियतमयथार्थः क्षितिपतिः ।
परार्थमेतत् स्वार्थादभिमततरो हन्त परवान्
परायत्तः प्रीतिः कथमिव र' पुरुषः ॥

(g) विपर्ययसं सीधं कुलमिव महारम्भचर्चनं
सरः शुष्कं साधीर्ह दयमिव मार्शनं सुहृदाम् ।
फलैर्होना हत्वा विगुणविधियोगादिव नया-
सृष्टेः च्छेदा भूमिर्भतिरिव कुनीतैरविदुषः ॥

4. (a) Write an explanatory note on कुलपति । 2

(b) Comment on the *samāsa* in अनुमालिनौतौरम्, कीतोवहाम्,
and सुहृदाम् । 6

(c) Derive शुष्क । 1

(d) Use a desiderative form for हन्तुमिच्छति । 2

5. Explain, with reference to the context, any *three* of the following:— 12

(a) सेवां लाघवकारिणौ कृतधियः स्थाने न्नहन्ति विदुः ।

(b) सुखितमुण्डो नचत्वाणि पृच्छसि ?

(c) पुरन्ध्रीणां प्रज्ञा पुरुषगुणविज्ञानविमुखी ।

(d) समानयस्तुल्यगुणं बधूवरं चिरस्य वाच्यं न गतः प्रजापतिः ।

(e) वयस्य, रन्ध्रीर्पानपातिनोऽनर्था इति यदुच्यते तद् अव्यभिचारि वचः ।

Account for the singular number in बधूवरम् and parse चिरस्य । 3

6. Give in Sanskrit the meanings of any *six* of the following expressions as used in your texts:— 9

क्षतिसन्धानम् ; प्रत्यादेशव्यलौकिकम् ; विशिष्टतिशेषः ; शरव्यम् ; जितकाशी ; उपजापः ;
सम्बकरिता ; वाचिकम् ; उपांशुवधः ।

7. Translate into Sanskrit:— 25

Hearing this, the disciple thought to himself, 'On catching sight of such a one the heart of his mother is made happy. But by what can every heart attain to lasting happiness and peace?' And to him whose mind was estranged from sin the answer came, 'When the fire of lust is gone out, when the troubles of mind arising from pride, hatred, and other sins have ceased, then peace is gained'.

THIRD PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

GROUP A

1. Translate into English any *two* of the following extracts :— 30

(a) राजमहिषः प्रारम्भतया विलीप्तः । सर्वतश्च नृत्यतः स्वैषस्य गलङ्गिः पादालतकैर-
रुषिता रागमयीव शृङ्गमे चोषी । समुल्लसङ्गिः स्नानमण्डलैर्मङ्गलकलशमय इव बभूव महीत्सवः ।
भुजलतानां विक्षेपैश्चालमय इव रराज जीवलीकः । समुल्लसङ्गिर्विलासस्मितैस्तडिन्मय इवाक्रियत
कालः । चलतां चक्षुषामंशुभिः कृष्णसारमया इवासन्वासराः ।

(b) हृदय प्रसोद प्रसोद । किममुनायासमात्रफलकेन दुर्लभजनप्रार्थनानुबन्धेन । अन्यश्च
येनैव दृष्टेनैतादृशः संतापो ननु वर्धते पुनरपि तं जनं प्रेक्षितुमभिलषसीत्यहो ते मूढता । अयि
नृशंस हृदय जन्मतः प्रथति सहस्रवर्षितमिमं जनं परित्यज्य चण्णमात्रदर्शनपरिचितं जनमनुगच्छत्कथं
न लज्यसे । अथवा कस्तव दोषः । अनङ्गश्चरपतनभीतेन त्वयैवमद्य व्यवसितम् । भवतु तावत् ।
अनङ्गमुपालम्ब्ये । (सास्त्रं) भगवन्कुसुमायुध निर्जितसकलसुरासुरो भूत्वा कथं स्त्रीजनं प्रहरन्न
लज्यसे ।

(c) राजा च श्रान्तनुर्हिजवचनोत्पन्नपरिवेदनशीकस्तान्ब्राह्मणानयञ्चोक्त्यायराजराज्यप्रदाना-
थारय्यं जगाम । तदायममुपगताश्च तमवनीपतिपुत्रं देवापिमुपतस्थुस्ते ब्राह्मणा वेदवादानुबद्धानि
वचांसि राज्यमये तेन कर्तव्यमित्यर्थवन्ति तमूचुः । असावपि वेदवादविरोधयुक्तिदूषितमनेकप्रकारं
तानाह । ततस्ते ब्राह्मणाः श्रान्तुमूचुः । आगच्छ भी राजन् । अलमवातिनिर्भन्धेन । प्रशान्त
एवासावनावृष्टिदोषः । पतितीयमनादिकालमहितवेदवचनदूषणीशारणात् । पतिते चायं नैव
परिवन्धं भवतीत्युक्तः स्वपुरमागत्य राज्यमकरोत् । दूषिते च ज्येष्ठे तस्मिन्देवापावस्त्रिलसत्यनिपत्ये
ववर्ष भगवन्पर्जन्यः ॥

- 2 (a) Form *sandhi* in the following :—प्रातः + गच्छ ; हरये + एव ; ;
बालकौ + अमू ; तत् + श्लोकः ; and तत् + टीका । 3

(b) Decline the following :—मास in the locative case ;
रे in the accusative case ; असृज् in the nominative case ; अस्त्रि
in the locative case ; नृ in the genitive case ; इदं (feminine) in the
instrumental case. 6

(c) Conjugate the following :—रुद् in लट् ; वस् in लिट् ; अस in लोट् ; इ in लङ् ; इत् in विधिलिङ् ; and लभ् in लृट्, (all in the third person). 6

(d) Derive the following words :—आसीन ; विहस् ; प्रेष्ठ ; आत् ; स्यूत ; युयुधान ; and जग्धा । 5

(e) Substitute single words for the following :—पुनः पुनः वृत्तिः ; पतितुमिच्छति ; आत्मनः पुनर्मिच्छति ; काव इवाचरति ; and छात्रं करोति । 6

(f) Dissolve the *samāsas* in the following :—ज्ञातानुलिप्तः ; अहिनकुलम् ; परोक्षम् ; अहर्दिवम् ; अनुगङ्गम् and द्विगुः । 5

3. Correct or justify any *three* of the following :— 6

- (a) महाराजा शत्रुं विजयति ।
- (b) ग्रामे अधिवसन् सी मां दुहति ।
- (c) अश्वे शिवदर्शनाय केन पथेन अहं जगाम ।
- (d) मे कर्मण विं भवतीति हि प्रियसखे त्वं मन्यसि ।

GROUP B

1. Write notes on any *three* of the following :—Āśvaghoṣa, Bhavabhūti, Rājasekhara, Śrīharṣa, and Kumārila, 9

2. What do you know of any *four* of the following works :—*Svapna-Vāsavadatta*, *Setubandha*, *Gīta-Govinda*, *Pañcatantra*, *Prabodha-candrodaya*, *Mahānaṭaka*, and *Mahābhāṣya*. 12

3. *Either*, Discuss the age of the *Rāmāyāṇā*.

Or, Describe briefly the *Purāṇas* and their position in Indian literature. 9

PĀLI

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PĀLI—HONOURS

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FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. (a) Bahum pi ce *sahitaṇi* bhāsamāno |
na takkaro hoti naro pamatto ||
Gopo va gūvo gaṇayaṇi paresaṇi |
na bhāgavā sāmāṇiassa hot ||
- (b) Na *naggacariyā* na jaṭṭa na paṇkū |
nānāsakā thaṇḍilasāyikā vū ||
Rajovajallani ukkuṭṭikapadhānaṇi |
sodhenti maccaṇi avitṭṇṇakakhāṇi ||
Alaṅkato cepi samaṇi careyya |
santo danto niyato brahmacārī ||
Sabbesu bhūtesu nidhāya daṇḍaṇi |
so brāhmaṇo, so samaṇo, sa bhikku ||
- (c) Asamā ubho *dāravihāravattino* |
gihi dāraposī, *amamo* ca subbato ||
Parapāṇarodhāya gihi asaṇṇito |
niccaṇi muni rakkhati paṇiṇe yato ||
Sikhī yathā nīlagīvo vihaṅgamo |
haṇṇassa nopoti jamaṇi kudācanaṇi |
Evaṇ gihi nānukaroti bhikkhuno |
munino vivittassa vanamhi jhāyato ||

- (i) Translate any *two* of the above extracts into English. 10
- (ii) Write explanatory notes on any *five* of the expressions italicized in extracts (a), (b) and (c). 10
- (iii) Compare and contrast the ideas in extracts (b) and (c), stating your own views on the point at issue. 10

2. Explain any *one* of the following extracts in Pāli :—

10

- (a) Aneka-jāṭisaṃsāraṃ sandhāvissaṃ anibbisāṃ |
gahakārakaṃ gavesanto, dukkhā jāti punappunāṃ ||
Gahakāraka diṭṭho 'si, puna gehaṃ na kāhasi |
sabbā te phāsukā bhaggā, gahakūṭaṃ visāṅkhitāṃ |
visāṅkhāragataṃ cittaṃ, taṇhānaṃ khayamajjhagā ||
- (b) Vītataṇho anādāno niruttipadakovidō |
akkharānaṃ sannipātaṃ jaṇṇā pubbāparāṇi ca ||
sa ve antinnasārīro mahāpaṇṇo mahāpuriso 'ti vuccati ||
- a) Aciraṇaṃ vata 'yaṃ kāyo paṭhavim adhisessati |
chuddho apetavinīṇaṇṇo niratthaṃ va kaṇṇāraṇaṃ ||

"The inclusion of this stanza in the *Chittavagga* is not at all warranted by its theme." Refute or justify. 5

- (b) Yānimāni apatthāni alāpūṇ' eva sārāde |
kāpotakāni aṭṭhīni, tāni disvāna kā rati ||

Point out the defect in comparison between *alāpūni* and *kāpotakāni aṭṭhīni*. How will the comparison stand if the reading *saṅkhavayāṇāni sīsāni* be substituted for *kāpotakāni aṭṭhīni* ? 5

4. Cite instances of archaism in expressions occurring in the *gāthās* of the *Dhammapada* and the *suttas* of the *Suttanipāta*. Can archaism in expressions be at all relied upon as a test of antiquity of the *gāthās* or the *suttas*, or of the texts (the *Dhammapada* and the *Suttanipāta*) embodying them ? 10

5. *Eulher*, Give an idea of the literary, social, and religious background of the *gāthās* of the *Dhammapada*, substantiating your answer with quotations from the text. 10

Or, What is an ideal life for a Buddhist according the *Dhammapada* and the *Suttanipāta* ? 10

6. Translate the following stanzas into idiomatic English :—

30

Tuṇhī Uttarike hohi, tuṇhī hohi Punabbasu |
yāvahaṃ buddhasatṭhassa dhammaṃ sossāmi satthuno ||
Nibbānaṃ bhagavā āhu sabbaganthappamocanaṃ |
atīvelā ca me hoti asmiṇi dhamme piyāyaṇā ||
Piyo loke sako putto, piyo loke sako pati |
tato piyatarā mayhaṃ assa dhammassa magganā ||
Na hi putto pati vā pi piyo dukkhā pamocaye |
yathā saddhammasavanaṃ dukkhā mocati paṇinaṃ ||
Loke dukkhapare tasmiṃ jarāmaṇa-samyutto |
jarāmaṇaṃ mokkhāya yaṃ dhammaṃ abhisambuddhaṃ ||

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English any *three* of the following extracts, adding notes on the words italicized :— 24

(a) *Paṇḍitavādā* 'haṃ bhante sallapissāmi no *rājavādā*, vissattho bhadanto sallapatu, yathā *bhikkhunā* vā *sāmaṇereṇā* vā *upāsakena* vā

ārāmikena vā saddhiṃ sallapati evaṃ vissattho bhadanto sallapatu, mā bhāyatū ti.—Suṭṭhu mahārājā thero abbbhanumodi. Rājā āha : Bhante Nāgasena, pucchissāmi ti.—Pucchā mahārājā ti.—Pucchito si mo bhante ti.—Vissajjitāni mahārājā ti.—Kiṃ pana bhante tayā vissajjitaṇ ti.—Kiṃ pana mahārājā tayā pucchitaṇ ti.

(b) Nāgasenassa dārakassa eken' eva uddosena tayo vedā hadayaṅgatā vācuggatā sūpadhāritā suvatthāpitā sumanasikatā ahesuṃ, sakim eva cakkhuṃ, udapādi, tisu vedesu *sa-nighaṇṇu-keḷubhesu sakkharappabhedesu itihāsapāñcamesu, padako, veyyūkarāṇo lokūyala-mahūpurisa-lakkhaṇesu* anavayo ahoṣi.—Atha kho Nāgasena dārako ācariyassa anuyogaṃ datvā pāsādi oruyha pubbavāsaniya coditahadayo rahogato patisallino attano sippassa ādimhi vā majjhe vā pariyosāne vā appamattakam pi sāram adisvā : tucchā vata bho ime vedā, palāpā vata bho ime vedā, asārā nissārā ti vippaṭisārī anattamano ahoṣi.

(c) Atha kho *Devanantiyo* rājānaṃ Milindaṃ etad avoca : Āgamehi tvaṃ mahārājā, atthi mahārājā Nāgaseno nāma thero paṇḍito byatto medhāvi vīṇito visārado bahussuto citrakathī kalyāṇapaṭibhāno, *attha-dhammaniruttā-paṭibhāna-paṭisambhidāsu* pāramippatto, ussahati so tayā saddhiṃ sallapitūṃ kaṅkhaṃ paṭivinctuṇ ti.—Atha kho Milindo rājā pañcamattehi *Yonakasalehi* parivuto rathavaram aruyha mahatā balakāyena saddhiṃ yena Saṅkheyyapariveṇaṃ tena upasaṅkami.

(d) Tena kho pana samayena *Sāgalanagaraṃ* dvādasavassāni suṇṇāni ahoṣi *samaṇa-brāhmaṇa-gaḥapati-paṇḍitā* ; yattha samaṇa-brahmaṇa-gaḥapati-paṇḍitā paṭivasanti ti suṇāti tattha gantvā rājā te paṇḥaṃ pucchati ; te sabbe pi pāṇihavissajjanena rājānaṃ ārādhetuṃ asakkontā yena vā tena vā pakkamanti, ye aññaṃ diṣaṃ na pakkamanti te sabbe tuṇḍibhūtā acchanti. Bhikkhū pana yebhuyyena Himavantaṃ eva gacchanti.

What is the enigma in the latter part of extract (a) ? Derive *anavayo* in extract (b) and *asakkontā* in extract (d). Account for the case-ending in *yena* and *tena* in the last sentence of extract (c), and also for the case-ending in *samaṇa* in the first sentence of extract (d). Conjugate the root of *acchanti* [extract (d)] in the Parokkhā. 5

2. Explain in Pāli any two of the following stanzas :— 8

- (a) Yathā hi aṅgasambhārā hoti saddo ratho iti |
Evaṃ khandhesu santesu hoti satto ti sammuti ||
- (b) Nābhinandāmi maraṇaṃ, nābhinandāmi jīvitaṃ |
Kālaṇ ca paṭikaṅkhāmi nibbisam-bhatako yathā ||
- (c) Pūjiyanti asamasamā sadevamānusehi te |
Na sūdiyanti sakkāraṃ, buddhānaṃ esa dhammatā ||

3. Sum up Nāgasena's arguments in reply to either of the following questions, adding your own observations thereon :— 5

- (a) *Atthi pana bhante koci gihī pi dhammacārī samacārī ?*
- (b) *Ke te bhante sattha, tvaṃ vū sattha gaṇaṇā vū sattha ?*

4. Explain fully any two of the following :— 10

- (a) Paṭitthānalakkhaṇaṃ sīlaṃ sabbesaṃ kusalānaṃ dhammānaṃ,
- (b) Aññaṃaññūpanissitā ete dhammā (*Nāma* and *Rūpa*), ekato va uppañjanti.
- (c) Yo atīto addhā esā purimā koṭi.
- (d) Vijāṇanalakkhaṇaṃ viññāṇaṃ.
- (e) Āma mahārāja, nirodho nibbānaṃ.

5. *Either*, Show, by some instance taken at random, how the author of the *Milinda* attempts, by a variety of illustrations, to clarify the abstruse problems of Buddhism. 9

Or, What light do the following extracts from the *Milinda* throw on the seat of Pāli learning and the method of studying the *Piṭakas*?—

(a) "Gaccha tvam Nāgasena Pāṭaliputtam : Pāṭaliputtanagare Asokāramāyasmā Dhammarakkhito paṭivasati, tassa santike *Buddhavacanam* pariyāpunaṁhi ti."

(b) "Atha kho āyasmā Nāgaseno.....āyasmato Dhammarakkhitassa santike *tepiṭakam Buddhavacanam* eken' eva uddesena tīhi māsehi *byāñjanato* pariyāpunitvā puna tīhi māsehi *āllhato* manasākāsi."

(c) "Atha kho āyasmā Dhammarakkhito āyasmantaṁ Nāgasenaṁ etad avoca : Seyyathā pi Nāgasena gopālako gāvo rakkhati, aññe gorasaṁ paribhuñjanti, evam eva kho tvam Nāgasena *tepiṭakam Buddhavacanam* dhārento pi ya bhāgi sūmañhiassāti. —Hotu bhanto alam ettakenā ti."

6. *Either*, Name the different stories included within the principal story of Udona, and discuss the utility of weaving tales within a tale in folk-literature. 9

Or, Summarize, giving parallels, any story selected from your text of the *Dhammapada-Aṭṭhakatha*.

7. Translate into idiomatic English :—

30

Atha naṁ rājā āha : "tāta mayam na kiñci jānāma, yathā amhākaṁ raṭṭham na nassati taṁ upāyam tvam eva jānāhi ti." "Tena hi mahārāja imasmim thāne paṭipāṭiyā tayo āvāṭe khaṇāpethā" ti. Rājā khaṇāpesi. Sudassano majjhimaṁ āvāṭaṁ nānābhesajjānaṁ purāpesi, dutiyaṁ gomayassa, tatiyaṁ dibbosadhānaṁ eva, tato majjhime āvāṭe visabindūni pāsesi, taṁ khaṇaṁ heva dhūmayitvā jālā utṭhahi, sa gantvā gomaya-āvāṭaṁ gaṇhi, tato pi jālā utṭhāya itaraṁ dibbosadh-puṇṇaṁ gaṇetvā osadhāni jhāpetvā nibbāyi, ālabhano tassa āvāṭassa avidūre utṭhāsi, atha naṁ visamusumā pahari, sarīracchavi uppaṭetvā gatā, sctakutṭhi ahoṣi, so bhayatajjito "nāgarājānaṁ vissajjemi" ti tikkhattuṁ vācaṁ nicchāresi.

THIRD PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

GROUP A

Attempt any FOUR questions.

1. Define ablaut, dissimilation, and anaptyxis, giving suitable examples of each. 10
2. State some of the principal causes of phonetic changes in a language. 10
3. Explain with illustrations the second sound-shifting and its modification that come within the scope of Verner's Law. 10
4. How would you divide languages morphologically? 10
5. Mention the main characteristics of Vedic Sanskrit. 10
6. Discuss the principles of phonology underlying changes in the Pāli vowel sounds. 10

GROUP B

Burman students are required to answer Questions 2 and 3 also from this group.

1. (a) Join any three of the following according to the rules of *sandhi* :— 3

कुतः आगतः ; विधुः राजते ; वाक् शतम् ; तौ इह ; अप एति ।

(b) Decline the following bases :—अखद् dative and ablative singular ; सुधी (masculine) instrumental and dative singular ; दिव् nominative and locative plural ; नति nominative and accusative plural. 3

(c) Conjugate the roots या and आस् imperfect, third person plural ; नौ and गम् perfect, first person singular ; विद् and शास् imperative, second person singular. 3

(d) Give the comparative and superlative forms of the following :—अनिक, दूर, प्रिय, and खदु । 2

(e) Re-write the following sentence, correcting all the errors therein :—मे प्रियसखा नगरात्प्रागत्वा अधुना यामस्य निकषा प्रासादे अविवसते । 4

2. (a) Account for the case-ending in the words in italics :—*Buddhassa* silāghate ; *annena* vasati ; *pathesu* caranti ; *tilesu* telaiṃ ; *āmantayāmi* vo bhikkhave ; *tiṭṭhiyā samaṇūnaṃ* issayanti. 5

(b) Write the conjugated forms in Pāli of the following roots :—*bhañj* optative, second person plural ; *kṛṣ* present, third person singular ; *chid* future conditional, first person singular, and *grāh* aorist, third person singular. 3

(c) Explain and illustrate the use of the present participle in Pāli. 3

(d) Combine according to the *samāsa* rules any four of the following :—*ajo ca elako ca* ; *pabbatassa tiro* ; *puppheli bhavo yassa so yati* ; *pūtiyo gandho yassa so* ; *tassa na anto* ; *jigucchulani annani*. 4

3. Translate either of the following extracts into Pāli :— 30

(a) Now, a few days later, a hostile king marched upon Benares and beleaguered it, sending a message to the king summoning him either to surrender his kingdom or to do battle. And the king of Benares ordered Bhīmasena out to fight him. So Bhīmasena was armed cap-à-pie in soldierly fashion and mounted on a war-elephant sheathed in complete armour.

(b) The Bodhisatta, who was seriously alarmed that Bhīmasena might get killed, armed himself also and seated himself modestly behind Bhīmasena. Surrounded by a host, the elephant passed out of the gates of the city and arrived in the forefront of the battle. At the first note of the martial drum Bhīmasena fell a-quaking with fear.

GROUP C

Alternative to Question 1 GROUP B. For Burman Candidates only.

(a) Express each of the following by a single word :—*ante nigutto ; rañño idani ñhānañ ; ekena vibhāgena ; suvaṇṇena pakatañ ; manussānañ samūho.* 5

(b) Derive and give the derivative meaning of the following :—*pāragu, arindamo, bhayadassūvi, pabbatūyati, jigāṃsati, and sayambhū.* 5

(c) Give the aorist forms in Pāli of any *three* of the following roots :—*su* and *thā* third person singular ; *upa-gam* third person plural ; *piv* and *dis* first person singular. 3

(d) Explain and illustrate :—*sūpekkhatte sati pi gamakattā samāso.* 2

FOURTH PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

GROUP A

1. Translate into English any *two* of the following passages, adding short explanatory notes where necessary :— 10

(a) Paṭhamañ saṅgahan̄ katvā katvā lokahitañ bahun̄ te yāvatāyukam̄ ñhatvā therā sabbe pi nibbutā.
Therā pi te *matipadīpahanulhakārā*
lokandhakārahānanamhi mahāpadīha
nibbāpitā maraṇaghoramahānilena :
tenāpi jīvitamadañ matimā jaheyyā ti.

(b) Tādā so Revatattthero saddhammatṭṭhitiyā cirañ karetuñ dhammasaṅgītiñ sabbabhikkhusamūhato pabhinnatṭhādīññānañ *piṭakattayadhārināñ* satūni satta bhikkhūnañ arahantānañ uccini.

(c) Samāpattisamāpannā nālapanti ti ihu te.
katham̄ nu vuṭṭhahanti ti vuttā āhamsu bhikkhavo :
pakkosanāya satthussa saṅghapakkosanāya ca
yathūkūlaparicchedā āyukkayavasena ca
vuṭṭhahanti ti vatvāna tesam̄ disvā 'panissayañ
pihesun̄ saṅghavacanañ, vuṭṭhāya sa tahiñ agā.

2. (a) Expound the *samāsas* in the italicized words in Question 1. 3
(b) Give the derivation of *arahantānañ, saṅgītiñ, and uccini.* 3
(c) Decline *satta* in all the cases. 2

3. *Either*, Narrate the story of the conversion of Moggaliputtatissa. 6

Or, Explain fully :—

Yassa cittañ uppajjati na nirujjhati, tassa cittañ nirujjhisati n' uppajjissati. Yassa vā pana cittañ nirujjhisati n' uppajjissati, tassa cittañ uppajjati na nirujjhati ti.

4. *Either*, Name and identify the places visited by the missionaries of Aśoka. 8

Or, Trace the lineage of Kālāsoka and show how far the tradition about the succession of kings up to Kālāsoka is trustworthy.

5. *Either*, Give a full account of the Second Council, touching particularly the following points :—(a) the object of holding the Council ; (b) the procedure adopted for the transaction of the business of the Council ; (c) the decisions reached and their effect on the Buddhist Saṃgha. 8

Or, Sift the evidences furnished by your text in order to find out the actual faith of Aśoka.

GROUP B

6. Substitute single words for :—

अहं द्रष्टुमिच्छामि ; आत्मनः पवनमिच्छति ; आत्मानं पण्डितं मन्यते या सा ; पुनः पुनर्गच्छति । 4

7. Frame short sentences with any *three* of the following words :—एनं, निकषा, श्वः, पञ्चकलः . 3

8. Join in *sandhi* :—वेदः + अघीतः ; पतन् + तरुः ; उत् + हरणम् ; राजन् + आगच्छ . 2

9. (a) Decline व्रह्मन् or पति and वाच् or एतद् in Dvitiyā and Caturthī. 4

(b) Conjugate in the active voice स्था in लिट् and दा in लङ् and लिट् . 6

10. Give the feminine forms of अश्व, गीप, घाट, विहस् . 2

11. (a) Re-write, after necessary corrections — 6

(i) सीता निरैच्छद् विपिने जलायन्तं सगं भयात् ।

(ii) विक्रीणाति फलं स्वाद् नगरे नगरे वणिक् ।

(iii) न कश्चित् कर्म लोकेऽस्ति साधुना हि सुदुर्लभम् ।

(b) Render the following Pāli sentences into Sanskrit :— 3

Ramaṇīyā vata bho dosinā ratti ; ko mayā saddhiṃ sallapitum ussahati ; ko ca tumhākaṃ paramattho .

GROUP C

12. Translate into English :—

30

(a) Saddhāya abhinikkhamma navapabbajito navo mitte bhajeyya kalyāṇe suddhājive atandite. saddhāya abhinikkhamma navapabbajito navo saṃghasmim viharāṃ bhikkhu sikkhetha vinayaṃ budho.

- (b) Supātha ñātayo sabbe yāvant' ettha samāgātā,
dhammaṃ vo desayissāmi : dukkhā jāti punappunam.
ārabhatha nikkhamatha yuñjatha buddhasūsanā
dhunātha Maccuno senam majāgāram va kuñjaro.
- (c) Yo 'dha koci manussesu parapānāni himsati,
asmā lokā paramhā ca ubhayā dhamīsate naro.
yo ca mettena cittena sabbapān' ānukampati,
bahum so pasavati puññaṃ tādīsako naro.

FIFTH PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

A. TEXT

1. Translate into English one of the following extracts, giving the context and adding notes where necessary :— 12

(a) Kim Ānanda Tathāgato bhikkhusaṃghaṃ ārabhha kiñcid eva udāharissati? Ahaṃ kho pan' Ānanda etarahi jīṇṇo vuddho mahallako addhagato vayo anuppatto, asītiko me vayo vattati. Seyyathā pi Ānanda jarasakataṃ veghamissakena yāpeti, evam eva kho Ānanda veghamissakena maññe Tathāgatassa kāyo yāpeti. Yasmim Ānanda samaye Tathāgato sabbanimit्तānaṃ amanasikārā ekaccānaṃ vedanānaṃ nirodhā animit्तānaṃ cetosamādhim upasampajja viharati, phūsukato Ānanda tasmim samaye Tathāgatassa kāyo hoti.

(b) Parinibbātu dāni bhante Bhagavā parinibbātu sugato, parinibbāna-kālo dāni bhante Bhagavato. Bhāsita kho pan' esā bhante Bhagavatā vācā : Na tavāhaṃ pāpima parinibbāyissāmi yūva me bhikkhū na sāvakā bhavissanti viyattā vinitā visūradā bahussutā dhammadharā dhammānudhamma-paṭipannā sāmīci-paṭipannā anudhammacārino, sakam ācariyakam uggahetvā ācikkhis-santi desessanti paññāpessanti paṭṭhapessanti vivarissanti vibhajissanti uttāni-karissanti, uppannaṃ parappavādaṃ saha dhammena suniggahitaṃ nigga-hetvā sappāṭihāriyam dhammaṃ desessanti ti.

(c) Tasmāt ih' Ānanda tuyh' ev' etaṃ dukkhataṃ, tuyh' ev' etaṃ aparaddhaṃ, yaṃ tvaṃ Tathāgatena evaṃ olāriko nimitte kaviramāne, olāriko obhāso kayiramāne, nāsakkhi paṭivijjhitaṃ, na Tathāgataṃ yāci : Tiṭṭhatu Bhagavā kappam, tiṭṭhatu sugato kappam, bahujanahitāya bahujana sukhāya lokānukampāya atthāya hitāya sukhāya devamanussānaṃ ti. Sace tvaṃ Ānanda Tathāgataṃ yāceyyāsi, dve vā te vācā Tathāgato paṭikkhipeyya, atha tatiyakam, adhivāseyya. Tasmāt ih' Ānanda tuyh' ev' etaṃ dukkataṃ, tuyh' ev' etaṃ aparaddham.

(d) Na na evaṃ Ānanda mayā paṭigac' eva akkhātāṃ, sabbe' eva piyehi manāpehi nānābhāvo vinābhāvo aññathābhāvo? Taṃ kut' ettha Ānanda labbhā? Yaṃ taṃ jātaṃ bhūtaṃ saṃkhataṃ paloka-dhammaṃ taṃ vata mā palujjī ti n' etaṃ ṭhānaṃ vijjati. Yaṃ kho pan' etaṃ Ānanda Tathāgatena cattaṃ vantaṃ muttaṃ pahīnaṃ paṭinissatṭhaṃ, ossatṭho āyusaṅkhāro. Ekamsena vācā Tathāgatena bhāsita : "Na ciraṃ Tathāgatassa

parinibbānaṃ bhavissati, ito tiṇṇaṃ māsānaṃ accayena Tathāgato parinibbāyissati ti.” Taṃ vacanaṃ Tathāgato jīvitaḥetu puna paccāvamissatī ti n’ etaṃ ṭhānaṃ vijjati.

2. *Either*, Explain fully any two of the following words :—

6

Dhammacakkhu, bhūṇavāra, ayyaputta, upalāpana, upaṭṭhāna-sālā, āvasathāgāra, brahmadāyaka.

Or, Write historical notes on any two of the following :—

The Vajjis, the Licchavis, the Moriyas, the Koliyas.

3. What is meant by *gahapati* ? How would you distinguish the *gahapatis* from the *khattiyas*, the *brāhmaṇas*, and the *samaṇas* in the following extract :—

4

“Dussīlo sīlavipanno yaṃ yad eva parisāṃ upasaṃkamati, yadi khattiyaparisaṃ yadi brāhmaṇaparisaṃ yadi gahapatiparisaṃ yadi samaṇaparisaṃ, avisārado upasaṃkamati mañku-bhūto.”

4. *Either*, Point out the doctrinal significance of the following lines :—

4

“Yāvakiṇṇā ca bhikkhave bhikkhū na kammārāmā bhavissanti na kammaratū na kammārāmataṃ anuyuttā, vuddhi yeva bhikkhave bhikkhūnaṃ pāṭikaṅkhā no parihāni.”

Or, Examine critically the prophecy contained in the following lines :—

“Pāṭaliputtassa kho Ānanda tayo antarūyābhavissanti, aggito vā udakato vā mithubhedā vā”

5. *Either*, Comment in some detail upon the *gāthās* of Pañcasikha Gandhabbaputta as a rare specimen of love-song in Pāli.

7

Or, Elucidate the theme of the *Sakkapañña Suttanta* by an analysis of the problems dealt with therein.

6. Group together matters of historical interest from your text of the *Samantapāsādikā*.

7

B. SANSKRIT GRAMMAR

7. (a) *Either*, Explain any two of the following grammatical terms :—

2

guṇa, vṛddhi, āgama, prātipadika, and samprasāraṇa.

Or, How does the word *ahan* behave at the end of a compound ?

(b) Write down—

- | | |
|---|---|
| (i) the full declension of <i>aiṣṭhr aṣṭan</i> OR <i>yusmad</i> ; | 3 |
| (ii) instr. pl. of <i>upānaḥ</i> and <i>viśvasṛj</i> ; | 1 |
| (iii) genitive pl. of <i>maghavaḥ</i> and <i>yuvan</i> ; | 1 |
| (iv) third pers. aorist (<i>Parasmaipada</i> and <i>Ātmanepada</i> , where necessary) of any two of the following :— <i>han, vas, pra-sū</i> and <i>upa-nī</i> ; | 1 |
| (v) the superlative forms of any two of the following :— <i>mṛdu, yuvan</i> and <i>dhamin</i> ; | 1 |
| (vi) the feminine forms of any two of the following :— <i>mātula, aśvapālaka</i> and <i>manuṣyaḥ</i> . | 1 |

(c) Distinguish between any *two* of the following pairs of italicized words :—(i) *sugandhi* puspam and *sugandha* āpārikāḥ ; (ii) *rājanvatī* and *rājavatī* ; (iii) *arthā* and *arthavān*. 2

(d) Use compounds for any *two* of the following :—(i) mahatī pūjā, (ii) mahataḥ pūjā, (iii) randhanāya pāṭtram, (iv) ahaśca rātrisca. 2

(e) Give the passive construction of any *two* of the following :— 4

(i) बालकौ मातरं मोदकं याचते ।

(ii) रामो मञ्चमधिशेते ।

(iii) भव्यः शकटं करोति ।

(iv) त्वां धर्मं मोक्षयति ।

(f) Translate into Sanskrit any *three* of the following :— 12

(i) A man was going from Benares to Kauśambī.

(ii) He fell among thieves, who wounded him and departed.

(iii) A man of a low caste, who was journeying the same way, had compassion for him.

(iv) He went up to him, bound up his wounds, brought him to an almshouse, and nursed him then.

C. UNSEEN

8. Translate into idiomatic English :—

30

Rājā Bārāṇasīm patvā 'alamkatanagarān pavisitvā soḷasasahasāhi nāṭakitthiḥ amaccādiḥ ca parivuto mahātalo nisīditvā sattāhaṁ mahāpānam pivtvā puttānam atthāya pokkharāṇīm kāresi ; te nibaddhaṁ tattha kiṇṇṇsu. Ath' ekadivasaṁ pokkharāṇiyān uḍake pavasiyamāne eko kacchapo pavisitvā nikkhamanaṭṭhānaṁ apassanto pokkha raṇitale nipajjitvā dārakānaṁ kiṇṇakāle uḍakato utthāya sisān niharitvā te oloketvā puna uḍake nimujji ; te taṁ disvā bhītā pitu santikān gantvā "tāta pokkharāṇiyān eko yakkho amhe tāseti" ti āhaṁsu. Rājā "gacchatha naṁ gaṇhāthā" ti purise ānāpesi ; te jālaṁ khipitvā kacchapam ādāya raṇiṇo dassesum. Kumārā taṁ disvā "esa tāta piṣāco" ti viraviṇṇsu. Rājā puttasiṇehena kacchapassa kujjhitvā "gaccha tassa kammakaraṇaṁ karoṭhā" ti ānāpesi.

SIXTH PAPER

Candidates are required to give their answers in their own words as far as practicable.

The questions are of equal value.

GROUP A

Attempt FOUR questions only

1. What forms of government were subsisting in the time of Buddha ? Give a brief account of them.
2. Give an account of the village life of Northern India in the time of Buddha.
3. Describe 'the outward form and style of Pāli literature'.
4. Discuss the nature, origin, and historical importance of the Jātaka stories.
5. Describe the popular religious belief of ancient India in the sixth and seventh centuries B.C.
6. (a) Describe Aśoka's dhamma.
(b) How far was it Buddhism ?
(c) What date do you fix for him from his inscriptions ?
7. Trace the rise and origin of Mahāyānism.

GROUP B

Attempt FOUR questions only.

8. Describe the scope and position of the Science of Language.
 9. Give an account of the causes and varieties of sound changes in a language.
 10. Write a note on 'the morphological classification of language'.
 11. 'Although logical considerations cannot alter the direction of changes, they still have considerable control over them.' Explain.
 12. Describe the parent Aryan speech, with reference to its sounds and accentuation.
 13. Write a note on the Inscriptional Prākṛits, specifying their dialects and their phonological and morphological peculiarities.
 14. Explain and criticize Sir George Grierson's mode of classifying the modern vernaculars.
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PĀLI—PASS

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FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate any four of the following, adding explanatory notes on the words italicized therein :— 20

- (a) *Appamādo* amatapadaṃ, pamādo maccuno padaṃ |
appamattā na miyanti, ye pamattā yathā matā ||
- (b) Mam' eva katam aññantu gihī *pabbajitū* ubho |
mam' evātivassā assu kiccūkiccesu kismici ||
iti bālassa saṅkappo icchā māno ca vaḍḍhati ||
- (c) Haṃsūdiccapatho yanti, ākāso yanti iddhiyā |
niyanti dhīrā lokamhā jetvā *Mūraṇṇi savāhininī* ||
- (d) Kodhaṃ jahe vipphaḥeyyamānaṃ |
saṅgiḥojanaṃ sabbam atikkameyya ||
Taṃ *nāmarūpasmiṇi* asajjamaṇaṃ
akiñcanaṃ nānupatanti dukkhā ||
- (e) Yogā vo jāyati bhūri, ayogā bhūri-saṅkhayo |
etaṃ dvēdhāpathaṃ ṇatvā *bhavūya vibhavūya* ca ||
tathattinaṃ niveseyya yathā *blūri* pavaḍḍhati "
- (f) Sātaṃ asātaṃ ti yam āhu loke
tam upanissīya pahoti *chando* ||
Rūpesu disvā vibhavaṃ bhavaṃ ca |
vinicchayaṃ kurute jantu loke ||

2. Explain any four of the following, bringing out the significance of each with reference to the context :— 10

- (a) *Manopubbaṅgamā dhammā*.
- (b) *Attā hi attano nātho*.
- (c) *Jighacchā paramā rogā*.
- (d) *Dhanapālako nāma kuñjaro*.
- (e) *Na cāhaṃ brāhmaṇaṃ brāmi yonijaṃ mātṭisambhavaṃ*.
- (f) *Urago jṇṇam iva tacāṃ purāṇaṃ*.
- (g) *Eko care khaggavisānakappo*.

3. Explain the following stanzas in Pāli :—

10

Upanītavayo ca *dānisi* sampayāto 'si Yamassa santike |
vāso 'pi ca te n' atthi antarā, pātheyam pi ca te na vijjati ||
So karohi dipam attano khippaṃ vāyama, paṇḍito bhava |
niddhantamalo anaṅgaṇo na puna jātijaraṃ *upehisi* ||

- (a) Disjoin the *sandhi* in *dānisi*.
- (b) Account for the verbal form *upehisi*.

1

1

4. *Either*, Describe the nature of 'mind' as characterized in the *Cittavagga*. 8

Or, What is *taṇhā*, and how can it be got rid of ? 8

5. In the *Aṅguttara-Nikāya* the Buddha is represented as saying : 'If there be any single expression by which my teachings may be summed up, it is *appamāda* (the principle of action).'

Show to what extent the truth of this is borne out by the *gāthās* of the *Dhammapada*. 10

6. *Either*, Discuss the quality of poetry in the *gāthās* of the *Dhammapada* and the *Suttanipāṭa*. 10

Or, What is *Nibbāna* according to popular Buddhism ? 10

7. Translate the following stanzas into English :— 30

Pātur abosi Magadhesu pubbe |
dhammo asuddho samalehi cintito ||
Avāpur' etaṃ amatassa dvāraṃ |
suṇantu dhammaṃ vimalenānubuddhaṃ ||
Selo yathā pabbata-muddhani ṭhito |
yathā pi paṇse janataṃ samantato ||
tathūpamaṃ dhammamayaṃ sumedha |
pāsūdam āruya samantacakkhu ||
Sokāvatiṇṇaṃ janataṃ apetasoko |
avekkhassu jāti-jarābhikkhūtaṃ ti ||
Uṭṭhehi vīra vijita-saṅgāma |
satthavāha anaṇa vicāra loke ||

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English :— 16

(a) Taṃ yathā '*musūyate*.—Atthi Yonakānaṃ nānāpuṭabhedanaṃ Sāgalaṃ nāma nagaraṃ nadipabbatasobhitaṃ ramaṇiyabhūmippadesabhāgaṃ āramuyyānopavanatalākapokkharāṇisampannaṃ nadipabbatavanarāmaṇeyya-kaṃ *sulavantaṇimmitaṃ* nihatapaccatthikapaccamittaṃ anupapilītaṃ vividha-vicitra-*dalhamatṭhā-lākoṭṭakaṃ varapavaragopuratoraṇaṃ* Uttarakurusāṅkāsaṃ sampannasassaṃ Ajakamandā viya devapuraṃ.

(b) Te ca tepitakā bhikkhū *pañcanekāyikā* pi ca catunekāyikā c' eva Nāgasenaṃ purakkharuṃ. Gambhīrapaṇṇo medhāvī *maggāmagassa* kovido uttamatthaṃ anuppatto Nāgaseno visārado. Tehi bhikkhūhi parivuto nipunehi *saccavādihi* caranto gāmanigamaṃ Sāgalaṃ upasaṅkami.

(a) Write grammatical notes on the italicized words in Question 1 (a). 5

Comment on the italicized words in Question 1 (b). 3

3. *Either*, Put together the geographical and historical information available in your text *Milindapañha*. 10

Or, Explain with illustrations the theory of *Kamma* as found in the *Milindapañha*.

4. *Either*, Explain any four of the following terms :—*vitakka*, *vicāra*, *saddhā*, *sati*, *nirutti*, *paṭibhāna paṭisambhīdā*, and *ñāṇa*. 10

Or, Enumerate and explain the five *khandhas*, and state the nature of their interrelation in the light of *nāmarūpa*,

5. *Either*, Summarize Nāgasena's replies to the following questions :— 8

(a) Sukhā vedanā kusalā vā akusalā vā abyakatā vā ti ?

(b) Kimatthiyā bhante Nāgasena tumhākaṃ pabbajjā, ko ca tumhākaṃ paramattho ?

Or, Give an idea of the part played by Milinda.

6. *Either*, Give an account of the scheme of the work, *Dhammapadaṭṭhakkathā*, and write all that you know about its date and authorship. 8

Or, Give an account of the various recensions of the *Milindapañha*.

7. *Either*, Give the substance of the *Mahālipiṇṇavattthu*. 10

Or, Write in Pāli a word for word commentary on one of the following stanzas :—

(a) Appamatto pamattesu suttesu bahujaḡaro
abalassuṃ va siḡhasso hitvā yāti sumedhaso.

(b) Appamādarato bhikku pamāde bhayadassivā
saṇṇojanaṃ aṇuṇi thūlaṃ ḡhaṇaṃ aggiva gacchati.

8. Translate into English :—

30

(a) Atha kho Bhagavato etad ahoṣi : bahūpakārā kho 'me pañcavaggiyā bhikkhū, ye maṃ padhūnapahitattaṃ upaṭṭhabhiṃsu. Yaṃ nūnāhaṃ pañcavaggiyānaṃ bhikkhūnaṃ paṭhamāṃ dhammāṃ deseyyaṃ ti. Atha kho Bhagavato etad ahoṣi : kamaṃ nu kho etarahi pañcavaggiyā bhikkhū viharanti. Addasa kho Bhagavā dibbena cakkhunaṃ visuddhena atikkantaṃānūsakena pañcavaggiye bhikkhū Bārūnasiyaṃ viharanto Isipatane migadāye. Atha kho Bhagavā Uruvelāyaṃ yathābhiraṇtaṃ viharitvā yena Bārūnasi tena cārikaṃ pakkāmi.

(b) Evaṃ me sutam. Ekaṃ samayaṃ Bhagavā Sāvatthiyaṃ viharati Jetavane Anāthapiṇḡikassa ārāme Karori-kuṭikāyaṃ. Atha kho sambahulūnaṃ bhikkhūnaṃ pacchābhattaṃ piṇḡapāṭapaṭikkantānaṃ Karerimaṇḡalamāle sannisinnānaṃ sannipatitānaṃ pubbenivāsapaṭisaṃyuttā dhammī kathā udapādi : Iti pubbenivāso iti pubbenivāso ti. Assosi kho Bhagavā dibbāya sotadhātuyā visuddhāya atikkantaṃānūsikāya tesaṃ bhikkhūnaṃ imaṃ kathāsallāpaṃ.

THIRD PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

GROUP A

Not for Burman students.

1. Illustrate the use of any *two* of the following words by constructing short sentences in Sanskrit :— 3

पृथक्, अलम्, नितराम्, and उत्त.

2. Correct errors in any *three* of the following sentences :— 6

- (a) सीङ्गि मां न विश्वसिति ।
 (b) राजा त्वां वयो मुद्रा दास्यति ।
 (c) अवागत्वा इमं कार्यं कुरु ।
 (d) यत्र बालका आसन्ते तत्रैव यूयं गम्यताम् ।
 (e) यः प्रजान् पालयति तस्य नरपत्युर्मङ्गलं भवति ।

3. *Either*, Translate any *three* of the following sentences into Sanskrit :— 6

- (a) I shall go on the eighteenth Māgha.
 (b) Sixteen children are playing on the ground.
 (c) Knowledge is the source of happiness.
 (d) Brāhmanas beg alms from a rich merchant.
 (e) Do you know that speaking the truth is a great virtue ?

Or, Illustrate the uses of the forth case-ending in Sanskrit. 6

GROUP B

1. (a) Disjoin the *sandhi* in—*pageva*, *sammadeva*, *etadavoca*, and *māyidāni*. 2

(b) Decline fully *EITHER go OR idāni* (masculine). 2

(c) Conjugate—*brū* or *dū* in the optative, and *vā* or *nī* in the aorist. 3

2. (a) Write notes on any *three* of the following forms :—*dhaniyati*, *daddalati*, *ghāteti*, *diyati* and *jigacchati*. 3

(b) Account for the case-endings in any *two* of the words italicized :—*bhūttesu* āgato, rudato dārahassa pabbaji, and *hitūya* devamanussānaṃ. 2

(c) Write a short note on the copulative (*dvandva*) compound. 3

GROUP C

Attempt any FOUR questions only.

1. Define language and discuss its origin. What is the scope of comparative philology ? 10

2. What do you mean by phonetic laws ? 'Phonetic laws brook no exception.' Explain. 10
3. Define morphology. How can you divide languages on a morphological basis ? 10
4. Give an account of the Indo-Germanic group of languages. Comment on the name Indo-Germanic. 10
5. *Either*, Write a short note on the phonology of the Pāli language. 10
- Or*, Write a short note on the home and origin of Pāli. 10

GROUP D

Translate into Pāli :—

30

- (a) But if thy mind no longer finds delight,
In sights and sounds and things that please the taste,
What is it in the world of men and gods,
That thy heart longs for ? Tell me that, Kassapa.
- (b) That state of Peace I saw, wherein the roots
Of new existences are all destroyed ; and greed,
And hatred, and delusion, all have ceased,
That state from lust of future life set free ;
That changeth not, can ne'er be led to change,
My mind saw that ! What care I for those rites ?

GROUP E

Alternative to GROUP A which the Burman students are not required to answer.

1. Construct short sentences in Pāli embodying any five of the following :—*puna ca param ; kin te ; yadā have ; yattha yadā yasmim ; na tena yena ; evam evaṇ ; hanā dāni.* 5

2. How are infinitives formed in Pāli ? Can *tave* or *tāye* be strictly treated as Pāli suffixes when they occur in such infinitives as *netave jaggiāye* ? 5

3. Write short grammatical notes on any five of the following verbal forms italicized in :— 5

- (a) *Mayam ottha yamāmase.*
(b) *Na bhaje pāpake mitto, bhajetha mittakalyāṇe.*
(c) *Jitaṇ ca rakkhe anivesano siyā.*
(d) *Aggim paricare vane.*
(e) *Yattha gantvā na socare.*
(f) *Santimaggam eva brūhaya.*
(g) *Ākaṅkhanto vināsam attano.*
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BENGALI (CLASSICAL)—PASS

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,, KSHITIMOHAN SEN.

FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Write your answers in Bengali, in EITHER pure সাধু ভাষা OR pure চলিত ভাষা, avoiding a mixture of the two forms in the same answer.

DRAMA TEXTS : 75 marks

1. *Either*, How would you characterize পৌরাণিক নাটক, to which category Giris Chandra Ghosh's *Janū* belongs? How far do the divine and super-human personalities of some of the characters interfere or harmonize with the plot and action? 15

Or, 'The so-called *Paurāṇik Nāṭak* is an anomaly in the field of modern dramaturgy.' Criticize or justify the above view, with special reference to Giris Chandra Ghosh's *Janū*.

2. *Either*, Give a sketch of the character EITHER of *Janū*, or of *Vidūṣak*. How far was our dramatist indebted to his predecessors in the creation of the character of *Janū*? Has it exerted any influence on the later Bengali drama? 15

Or, Compare and contrast the humour of Giris Chandra Ghosh with that of Rabīndranāth.

3. *Either*, '*Visarjan* is a drama of conflict of ideals.' Show how far this is true in both plot and characterization. 15

Or, Institute a comparison among the characters of the King, Queen and *Nakshatra* *līlā* in *Visarjan*.

4. (a) Explain four of the following passages (two from each group), with full reference to the context, discussion of its dramatic appropriateness, and elucidation of all difficult points :— 24

GROUP A

- (i) নিজ কৰ্ম কৰিলে সাধন,
কষ্ট যদি হন জনাৰ্দ্দন,
নাৱায়ণ কৰু তি নি নন।

- (ii) জগৎকু নারায়ণ যদি হে কেশব,
একের কি হেতু বন্ধু, বৈরী অপরের ?
পাণ্ডবের সখা, আর নহ সখা কার ?
- (iii) কোথা ঘর ?
যথা পাণ্ডব-কিষ্কর উচ্চ জয়-রবে
পাণ্ডবের প্রভুত্ব প্রচারে ?
- (iv) জেনো বীর, প্রপঞ্চ সকলি ;
মহাকাল করে খেলা পঞ্চভূত ল'য়ে ;
ভাঙ্গে গড়ে ইচ্ছামত তার ।

GROUP B

- (v) ভক্তিতে প্রেমেতে রক্ত মাথামাখি হয় ;
ক্রুর হিংসা দয়াময়ী রমণীর প্রাণে
দিয়ে যায় শোণিতের ছাপ !
- (vi) হরণ করিয়ে ল'য়ে তোমার মহিমা
আপনার দেহে বহে এত অহঙ্কার !
- (vii) চিন্তার নরক চেয়ে কার্য্য ভাল, যত
ক্রুর, যতই কঠোর হোক !
- (viii) সেই সত্য কোটি মিথ্যা রূপে চারি দিকে
ফাটিয়া প'ড়েছে ; সত্য তাই নাম ধরে
মহামায়া, অর্থ তার মহা মিথ্যা !

(b) Write full explanatory notes on six of the following words : — 6

বাজী ; ত্রিভঙ্গ মুরারি ; ফাস্তনি ; বীরাজনা ; সোহাগ ; সাতগুঞ্জী ; হাড়ীর
হাল ; পিরীত ; ভবের কাণ্ডারী ; স্বজন ; 'মিনতি ; কাপুরুষ ; পাশুপত অস্ত্র ;
দেউটী ; তা'রা সটকেছে ; একেশ্বর ; আশোয়ার ; ইতুর্ভাড়া ; এড়াটে-কেড়াটে ;
অলুঙ্ঘ্যে ; স্তরজঃ ব্যাম' ।

RHETORIC AND GRAMMAR : 25 marks.

5. *Either*, Explain briefly *five* of the following, with examples wherever suitable :— 10

বজ্রোক্তি ; প্লেথ ; মালোপমা ; বিরোধ ; ব্যাঞ্জোক্তি ; যমক ; হেতুভাস ;
খণ্ডকাব্য ; নান্দী ; শাস্ত্ররস ; একাবলী চন্দ ; মালঝাঁপ ।

Or, Enumerate with short explanations the more important types of শব্দালঙ্কার in Bengali, giving their names in Bengali rhetoric.

6. Answer *two* of the following questions :— 15

(a) Explain ঙ্গ, তৎপুরুষ, বহুব্রীহি and ষষ্ঠ samāsas, giving *pure Bengali* examples in each case (i. e. examples of compounds in which Sanskrit and foreign words do not occur).

(b) Discuss the pronunciation of ঝ, ঞ, ড়, ঙ and ক in Bengali.

(c) Explain the following, with examples :—

অঘোষ, মহাপ্রাণ, স্মৃশ, উন্ন দন্ত্যোষ্ঠ্য লুপ্ত অকার ।

(d) Give the full conjugation of the root আ-আইস (= 'to come') in the চলিত ভাষা ।

(e) Write a short note on Bengali syntax.

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Give a brief account of the growth of Vaisnava poetry and comment on its style. 10

2. *Either*, Describe after Kavikankan the character of Janardan Ojha, the village schoolmaster. 10

Or, Reproduce in your own words Srimanta Sadāgar's Vision of the Lady in the Lotus. 10

3. *Either*, Give a critical estimate of the character of Vyas as depicted by Bharat Chandra. 10

Or, Describe fully the attempt of Vyasdev to build a second Bārāṇasi by invoking the aid of Annapūrṇa. 10

4. Explain the following passages, with reference to the context :— 20

(a)

Either,

চম্পক সোণ কুম্ভ কনকাচল
 জিতল গৌরতলু-লাবণিরে ।
 উন্নত গৌম সৌম নাহি আত্মভব
 জগমনোমোহন ভাভনি রে ॥

Or,

গৌরাক্ষের নিছনি লইয়া মরি ।
 ও রূপ মাধুরী পিরীতি চাতুরী
 তিল আধ পাসরিতে নারি ॥
 বরণ-আশ্রম কিস্কন-অকিস্কন
 কার কোন দোষ নাহি মানে ।
 কমলা-শিব-বিহি ছলহ প্রেমধন
 দান করয়ে জগজনে ॥

(b)

Either,

রূপলাগি-আঁখি বুঝে গুণে মন ভোর ।
 প্রতি অঙ্গ লাগি কান্দে প্রতি অঙ্গ মোর ॥
 হিয়ার পরশ লাগি হিয়া মোর কান্দে ।
 পরাণ পিরীতি লাগি থির নাহি বাঞ্চে ॥

Or,

গগনহিঁ নিমগন দিনমণি-কঁাতি ।
 লখই না পারিয়ে কিয়ে দিন রাতি ॥
 ঐছন জলদ কয়ল আঙ্কিয়ার ।
 নিয়ড়হিঁ কোই লখই না পার ॥
 চলু গজ গামিনী হরি-অভিসার ।
 গমন নিরঙ্কুশ আরতি বিথার ॥

(c)

Either.

কাণ্ডার ভাই রাখ ডিঙ্গা যথা পাও স্থল ।
 অরি হৈল দেবরাজ বেকতড়কা পড়ে বাজ
 বরিষে মুঘলধারে জল ॥
 শিল যেন পড়ে গুলি ভাঙ্কে মাথার খুলি
 বেগে জল বাজে নে কাঁড় ।
 বিষম জলের রয় প্রাণ মোর স্থির নয়
 কাণ্ডার ধরিতে নারে ডাঁড় ॥

Or,

ধন্য ক্ষেত্র জগন্নাথ বাজারে বিকায় ভাত
 কোই থাই না শুনি হেন বোল ।
 ত্রিসঙ্ক্যা বিকায় হাটে স্থপ থণ্ড পুরি ঘটে
 আলু বড়া স্বস্তার বোল ॥
 পথশ্রমে হবে জোন্মা কিনহ তোড়ানি মন্দা
 মরিচ সমান যার তার ।
 আজানু লম্বিত জটা সন্ন্যাসী কাপুড়্যা ঘটা
 অন্ন মাগ্যা ফিরয়ে বাজার

(d)

Either.

উর্কে ছুটে জটা ঘনঘটা জর জর ।
 উছলিয়া গজাজল ঝরে ঝর ঝর ॥
 গর গর গর্জে ফণী জিহি লক্ লক্ ।
 অর্দ্ধশশী কোটা সূর্য্য অগ্নি ধক্ ধক্ ॥
 হল হল জলিছে গলায় হলহল ।
 অট্ট অট্ট হাসে মুণ্ডমালা দলমল ॥

Or,

কপালে টনক নড়ে হাতে হৈতে হাতা পড়ে
 উছট লাগিয়া পদ টে.

হৃদেইব-যখন ধরে ভাল কণ্ঠ মন্দ করে

অন্নদার উপজিল রোষ ।

অনুগ্রহ গেল নাশ নিগ্রহে ঠেকিলা ব্যাস

ভাগ্য বশে গুণ হৈল দোষ ॥

5. Give a critical estimate of the style and diction of Michael Madhusudan Dutt. 10

6. *Either*, Mention some of the important features which constitute, in your opinion, the excellence of Rabindranath's poetry. 12

Or, Explain the idea contained in নির্ঝরির স্বপ্নভঙ্গ with illustrative quotations from the poem. 12

7. Explain fully with reference to the context:— 18

(a)

Either,

আয়, পাখী, আমরা দুজনে
গলা ধরাধরি করি ভাবি লো নীরবে ;
নবীন নীরদে প্রাণ তুই করেছিস্ দান—
সে কি তোর হবে ?
আর কি পাইবে রাধা রাধিকা-রঞ্জন ?
তুই ভাব ঘনে, ধনি, আমি শ্রীমাধবে !

Or,

এই যে কত মুকুতাফল, এ ফুলের দলে,—
লো সখি, এ মোর আঁখি-জল, শিশিরের ছলে ।
লয়ে কৃষ্ণ চূড়ামণি কাঁদিহু আমি, স্বজনি,
বসি একাকিনী,
তিতিহু নয়ন জলে, এই জল সেই দলে,
গলে প'ড়ে শোভিতেছে, দেখ লো, কামিনি ।

(b)

Either,

শুধু এসে একবার দাঁড়াও কাতরে
মেলি' দুটি সক্ররুণ চোখ,
পড়ুক দুফোটা অশ্রু জগতের 'পরে
যেন দুটি বান্দ্রীকির ন্লোক !

ব্যথিত করুক স্নান তোমার নয়নে,
করুণার অমৃত নিব্বরে,
তোমাতে কাতর হেরি', মানবের মনে
দয়া হবে মানবের 'পরে ।

Or,

পাষণ-পিঞ্জরে তব
নাহি চাহি নিরাপদে রাজভোগ নব ;—
চাই স্বাধীনতা, চাই পক্ষের বিস্তার,
বক্ষে ফিরে পেতে চাই শক্তি আপনার,—
পর্যাণে স্পর্শিতে চাই—ছি'ড়িয়া বন্ধন—
অনন্ত এ জগতের হৃদয়-স্পন্দন ।

(c)

Either,

“কুশল ত গোবর্দ্ধন !”—প্রভাতে আসিয়
জিজ্ঞাসিলে গিরিবরে,—ত্রস্তে গিরিবর
“কুশল ত গোপগণ !”—করিত উত্তর ।

পুণ্য অঙ্গি-পদতলে পবিত্র স্নন্দর
পুষ্প-পাত্র বৃন্দাবন ! সৌধ-সুশোভিত
শোভিত মথুরাপুরী নৈবেদ্যের মত ।

Or,

“আমি এ বিপ্লবকারী ! মহর্ষি ! মহর্ষি !
সরল বৈদিক ধর্ম, পূজা প্রকৃতির,
সারল্য-সৌন্দর্য-মাথা, আর্ধ্য শৈশবের,
—সে সরল হৃদয়ের তরল প্রবাহ—
ঐশাচিক যজ্ঞে যারা করেছে বিকৃত,—
মহর্ষি ! বিপ্লবকারী আমি, কি তাহারা ?

8. Discuss the character of Krishna as depicted by Nabinchandra, and show wherein it differs from the traditional presentation of that character.

THIRD PAPER

Candidates are required to give their answers in standard Bengali in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into Bengali *one* of the following extracts:— 20

(a) Hence it is that it is almost a definition of a gentleman to say that he is one who never inflicts pain. This description is both refined and, as far as it goes, accurate. He is mainly occupied in merely removing the obstacles which hinder the free and unembarrassed action of those about him; and he concurs with their movements rather than takes the initiative himself. His benefits may be considered as parallel to what are called comforts or conveniences in arrangements of a personal nature: like an easy chair or good fire, which do their part in dispelling cold and fatigue, though nature provides both means of rest and animal heat without them. The true gentleman in like manner carefully avoids whatever may cause a jar or a jolt in the minds of those with whom he is cast;—all clashing of opinion, or collision of feeling, all restraint, or suspicion, or gloom, or resentment; his great concern being to make every one at their ease and at home. He has his eyes on all his company; he is tender towards the bashful, gentle towards the distant, and merciful towards the absurd; he can recollect to whom he is speaking; he guards against unreasonable allusions, or topics which may irritate; he is seldom prominent in conversation, and never wearisome.

(b) Success, which touches nothing that it does not vulgarize, should be its own reward. In fact, rewards of any kind are but vulgarities. We applaud successful folk, and straight forget them, as we do ballet dancers, actors, and orators. They strut their little hour, and then are relegated to peerages, to baronetcies, to books of landed gentry, and the like. Quick triumphs make short public memories. Triumph itself only endures for the time the triumphal car sways through the street. Your nine days' wonder is a sort of five-legged calf, or a two-headed nightingale, and of the nature of a calculating boy—a seven months' prodigy, born out of time to his own undoing and a mere wonderment for gaping dullards who dislocate their jaws in ecstasy of admiration and then start out to seek new idols to adore. We feel that after all the successful man is fortune's wanton, and that good luck and he have but been equal to two common men. Poverty, many can endure with dignity. Success, how few can carry off even with decency and without baring their innermost infirmities before the public gaze!

2. *Either*, Who is the original author of the *Kādambarī*? What do you know of him? Can you call it a novel? Compare it with the *Dattā* by Śarat Chandra Chatterji as regards the setting of the story. 16

Or, Under what class of literature would you place the *Kādambarī*? Give in your own words the main story of the *Kādambarī* and state how the story has been introduced.

3. *Either*, Can you call *Ālāler Gharer Dulāl* the first Bengali novel? Compare Tek Chand Thākur with Bankim Chandra Chatterji as novelists and also compare their style of writing. 16

Or, Describe briefly the main characters of *Ālāler Gharer Dulāl*.

4. *Either*, Between Bankim Chandra Chatterji and Sarat Chandra Chatterji, whom do you consider to be the better novelist? Substantiate your remarks by comparing a novel of the one with a novel of the other. 16

Or, Compare the character of Matī Bibi with that of Kapālakuṇḍalā.

5. *Either*, Why has the book been called *Dattā* Delineate the character of the *Dattā* 14

Or, Describe the gradual psychological changes in the character of Vijayā leading to her marriage with Narendra.

6. Explain fully with reference to the context any *four* of the following passages :— 12

(a) বাহুবল নহে, জিগীষা নহে, রাষ্ট্রগৌরব নহে, শাস্ত রসাস্পদ, গৃহধর্মকেই রামায়ণ করুণার অশ্রুজলে অভিষিক্ত করিয়া তাহাকে স্মরণ্য বীর্ষের উপর প্রতিষ্ঠিত করিয়াছে।

(b) যে আত্মসংবৃত প্রেম সমস্ত সংসারের অমূল, যাহা আপনার চারিদিকের ছোট এবং বড়, আত্মীয় এবং পর, কাহাকেও ভোলে না, যাহা প্রিয়জনকে কেন্দ্রস্থলে রাখিয়া বিশ্বপরিধির মধ্যে নিজের মঙ্গল মাধুর্য্য বিকীর্ণ করে, তাহার ধ্রুবদেবে-মানবে কেহ আঘাত করে না, আঘাত করিলেও সে তাহাতে বিচলিত হয় না।

(c) ফুলকে তিনি এমনি স্বভাবত ফলে ফলাইয়াছেন, মর্ত্যের সীমাকে তিনি এমন করিয়া স্বর্গের সহিত মিশাইয়া দিয়াছেন যে, মাঝে কোন ব্যবধান কাহারো চোখে পড়ে না।

(d) আমরা কর্মকে জয়ী করিব না, কর্মের উপরে জয়ী হইব।

(e) সত্যের স্থান বৃকের মধ্যে, মুখের মধ্যে নয়।

(f) মনুষ্য হৃদয় ক্লেষাধিক্য বা স্বখাধিক্য একেবারে গ্রহণ করিতে পারে না, ক্রমে ক্রমে গ্রহণ করে। নব-কুমারকে প্রথম ধূমরাশি বেষ্টন করিল; পরে বহ্নি শিখা হৃদয় তাপিত করিতে লাগিল; শেষে বহ্নি-রাশিতে হৃদয় ভস্মীভূত হইতে লাগিল।

7. Re-write in standard colloquial Bengali *either* of the following extracts :— 6

(a) মুই বি তোমার সাথে বাতচিত কর্তে বহুত খোস—তেনারা খাপকান—তেনাদের নজদিকে এন্তে মোর ডর লাগে। যে সব বাত ভুমি জাহের করলে, সে সব সাদা বাত। আদমির হরমত ও কুদরত গেলে

জিন্মিগি ফেলতো। মামলা মোকদ্দমার নেগাবানি তুমি ও মুই করে বিলকুল বখেড়া কৈটিয়ে দিব—তাতে ডর কি?

(b) বাবু সাহেব! তোমার ছোট লেড়কার ভৌল নেগা করে মোর বড় গমি হচ্ছে। মোর মালুম হয়, ওনা দেওয়ানা হয়েছে—তেনা মোর উপর বড় ঝাঞ্জা। দশ আদমির নজদিগে বলে, মুই জেমাকে খারাব করলাম। এ বাত শুনে মোর দেলে বড় চোট লেগেছে। এ বহুত বুয়া বাত—এজ এসম্মাফিক মোরে বললে,—কেল তোমাকেও শক্ত শক্ত বলতে পারে। লেড়কা বেতমিজ ও বজ্জাত হলে এলাজ দেওয়া মোনাসেব। আর যে রকম সবক পড়ে, তাতে যে জমিদারি থাকে, এত্না মোর একেলে মালুম হয় না

URDU (CLASSICAL)—PASS

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FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Explain fully any three of the following verses:—

18

(a) وفور خط سے ہے بد رنگ جلد مصحف عارض

کلام اللہ کی کافر نے کیا صورت بنائی ہے

(b) سایہ کی طرح خط بڑھا چہرہ صاف اتر گیا

آیا زوال یار پر حسن کی در پھر تھلی

(c) چیری ہرن میں راجہ اندر تیری

رکھنا دن رین دیا کی نجر

سرنے کا برج سین مکت

روپے کے تخت پر بیٹھ اندر

(d) استاد کہو سر سے ہر دم

دنیا میں رہیں ہجرت اکھتر

2. Answer any three of the following:—

(i) Do you think that *Inder Sabha* was written at the instance of a French courtier of Wajid 'Ali Shah? Adduce evidence either for or against the theory, as the case may be. 15

(ii) 'Madari Lal produced another *Inder Sabha* which though inferior to Amanat's play in dramatic merit is however superior to it, in some measure, in literary value.' Discuss. 15

(iii) Give an account of the life and writings of Amanat and trace the influence of Lucknow on his drama. 15

(iv) Assign the place of *Inder Sabha* in Urdu drama and trace its influence on Urdu dramatic literature. 15

3. (a) Write notes on any three of the following:— 6

دھان پان - چو بولہ - تان سین - بہاگ - بسنت

(b) Reproduce, in your own words, the conversation between گلفام and سبز پری. 6

RHETORIC AND GRAMMAR.

4. Explain fully any three of the following 'Figures of Speech' and give examples in each case:— 9

- تجنیس مضارع - تلمیم - اشتقاق - لف و نشر

رد العجز علی الصدر

5. Name and explain the 'Figures of Speech' in the following verses:— 9

(n) کیا ہی تاثیر ہے واللہ تری صحبت کی

یک بیک لحظہ میں بن جاتا ہے عاقل نادان

(b) ستم کر ہم کرم سمجے جفا کر ہم وفا سمجے

جو اسپر بھی نہ سمجے وہ تو اُس بت سے خدا سمجے

(c) ہوا جہاں تیز چل رہی تھی وہاں چراغ وفا جلایا

کسی کا شکوہ نہیں جہاں میں شہید ہوں اپنی سادگی کا

6. Name and explain at least *seven* kinds of اضافت in Urdu and give examples of each. 7

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English, giving explanatory notes where necessary:— 35

(۱) دی حق، نے تجھے بادشہی حسن نگر کی

یہ کشور ایران میں سلیمان سے کہونگا

(۲) مجھ کو ہوا ہے معلوم اے مست جام خرنیں

تجھہ انکھڑیاں کے دیکھے عالم خاب ہوگا

(۱) آئے فضل کرتے نہیں لگتی بار

نہر اُس سے مایوس اُمیدوار

(۲) فلک نے تو اتنا ہنسایا نہ تھا

کہ جسکے عوض یوں رلانے لگا

2. Explain clearly the meaning of the following lines:— 35

(۱) کسی کو دیکھے دل کڑی نواسنمِ فغان کیوں ہو

نہو جب دل ہی سینے میں تو پھر منہ میں زبان کیوں ہو

(۲) قفس میں مجھ سے روداد چمن کہتے نہ تر ہمدم

گری ہے جس پہ کل بجلی وہ میرا آشیان کیوں ہو

(۱) سوشل چشم مسلم میں ہے نیسان کا اثر پیدا

خلیل اللہ کے دریا میں ہونگے پھر گھر پیدا

(۲) کتاب ملت بیضا کی پھر شیرازہ بندی ہے

یہ شاخ ہاشمی کرنے کو ہے پھر برگ ربر پیدا

3. Name the authors of the four groups of the verses in Questions 1 and 2 and write a short note on *any one* of those authors. 30

THIRD PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English:—

20

یہ بندہ خدا کئی روز سے اس شہر میں وارد ہے اور سرکار سے سب طرح کی خبر گیری ہوتی ہے - جیسی خوبیاں اور نیک نامیاں ملکہ کی سُنکر اشتیاق دیکھنے کا ہوا تھا اُس سے چار چند پایا - اب حضور کے ارکان دولت یوں کہتے ہیں کہ جو مطلب اور تمنا تیری ہو سو ظاہر کر - اس واسطے بے حجابانہ جر دل کی آرزو ہے سو عرض کرتا ہوں کہ میں دنیا کے مال کا محتاج نہیں - اپنے ملک کا میں بھی بادشاہ ہوں - فقط یہاں تک آنا اور محنت اٹھانا آپ کے اشتیاق کے سبب سے ہوا جو تنہا اس صورت سے آپہنچا ہوں - اب اُمید یہ ہے کہ حضور کی توجہ سے یہ خاک نشین اپنے مطلب دلی کو پہنچے *

2. Write in your own words what Hālī says about Urdū poets paying too much attention to words and neglecting the true sense of poetry. 10

3. Translate into English:—

20

جہاز کی حرکت اول اول تو چندان ناگوار نہیں معلوم ہوئی لیکن شام کے قریب طبیعت متغیر ہوئی شروع ہوئی - رات کا کھانہ کھا کر سو رہے - صبح کو آنکھ کھلی تو عجیب کیفیت تھی - دورانِ سر اور متلی کی ایسی سخت تکلیف جو کسی طرح بیان میں نہیں آ سکتی - دو دن تک غشی کی سی حالت رہی - جہاز کا ملازم کبھی چائے - بسکت - نانگیال لاتا تھا کہ کچھ کھا لو - لیکن ان چیزوں کے دیکھنے سے اُبکائی آتی تھی - مسٹر آرڈلڈ چاء پی لیا کرنے سے - اگرچہ ہضم نہیں ہوتی تھی لیکن قے کرنے سے طبیعت ہلکی ہو جاتی تھی - ان کے اصرار سے میں نے بھی دو ایک بار چائے پیکر قے کی اور فائدہ محسوس ہوا *

4. (a) In the extract above (Question 3) re-write the following phrases, employing simpler words:— 6

(۱) طبیعت متغیر ہوئی شروع ہوئی

(۲) غشی کی سی حالت رہی

(۳) فائدہ محسوس ہوا

(b) Give the gender of—

4

شام - صبح - اصرار - جہاز

5. Describe any one of the places visited by Shibli. 20

6. Translate into Urdū :—

20

Scipio landed in Africa in 147 B.C. His first step was to restore discipline to the army. He next took by storm Megara, a suburb of Carthage, and then proceeded to construct a work across the entrance of the harbour to cut off the city from all supplies by sea. But the Carthaginians defended themselves with a courage and an energy rarely paralleled in history. While Scipio was engaged in this laborious task, they built a fleet of fifty ships in their inner port, and cut a new channel communicating with the sea.

ARABIC

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FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Answer any *three* of the following :—

18

(a) 'Abu-l-'Atāhiyah's belief in the inevitability of misfortune reflects his grasping and fear-filled nature.' Discuss the statement.

(b) Compare the subject-matter of the poetry of Abu-l-'Atāhiyah with that in the *Kitāb al-Ḥamāsah*.

(c) Would you agree with the critic who estimates the poetry of Abu-l-'Atāhiyah as superior to that of al-Mutanabbī?

(d) Give an account of al-Farazdaq, and discuss the opinion that already by his time sensitiveness to natural impressions has given place to sensitiveness to sound-impressions of words.

2. Explain the following passages, adding notes where necessary:—12

(a)

تَقُوبُ مِنَ الذَّنْبِ إِذَا مَرَضَتْ * وَ تَرْجِعُ لِلذَّنْبِ إِذَا بَرِئَتْ

إِذَا مَا الضَّرُّ مَسَكَ أَنْتَ بَالُ * وَ اخْبِتْ مَا يَكُونُ إِذَا قُوِيَ

فَكَمْ مِنْ كَرَّةٍ نَجَاكَ مِنْهَا * وَ كَمْ كَشَفَ الْبَلَاءُ إِذَا بَلِغَتْ

وَ كَمْ غَطَاكَ فِي ذَنْبٍ وَعَنْهُ * مَدَى الْإِيمِ جَهْرًا قَدْ نَهَيْتَا

اما تخشى بان تلقى المنايا * وانت على الخطايا قد دهيتا
وتنسى فضل رب جاد فضلا * عليك ولا اروعيت ولا خشيتا
(b)

عجبا للناس ما اغفلهم * لوقوع الموت عما سيقع
عجبا انا لنلقى مرتعا * كلنا قد عاث فيه ورتع
يا اخى الميت الذى شيعته * فحشى الترب عليه ورجع
ليت شعري ما تزودت من * الزاد يا هذا لهول المسطلع
يوم يهدوك مجبوك الى * ظلمة القبرر ضيق المضطجع

3. (a) Write notes on the expressions underlined in Question 2. 18

(b) Parse after the fashion of Arab grammarians the *bayts* beginning:—

عجبا للناس ما ... and اما تخشى بان ...

(c) *Either*, Assonance in one line is supported by a similar sound in the 'next, till a pattern of such internal sounds is worked out in one poem. Can you illustrate this in the case of Abul-I-'Atāhiyah?

Or, Illustrate assonance, alliteration, and antithesis as used by Abu-l-Atāhiyah.

4. (a) Translate into English the following passages:— 18

(1)

ولما رايت الشيب لاح بياضه * بمفروق راسى قلت للشيب مرحبا
ولو خفت انى ان كففت تحيتى * تنكب عنى رمت ان يتنكبا
ولكن اذا ما حل كره فسامعت * به النفس يوما كان للكره انهب

(2) وقال ابن عبدل الاسدى

انى لا استغنى فما ابطر الغنى * وارض ميسورى على مبتغى قرضى
واعسر احيانا فتشدت عسرتى * وادرك ميسور الغنى ومعى عرضى
وما نالها حتى تجلت و اسفرت * اخو ثقة منى بقرض ولا فرض

و ابذل معروفى و تصفو خليقتى * اذا كدرت اخلاق كل فتى محض
و لكنه سيب الاله و رحلتى * رشدى حيازيم المطيعة بالغرض
و استنقذ المولى من الامر بعد ما * يزل كما زل البعير عن الدحض

(b) Write notes on the expressions underlined in this passage.

(c) What poetic qualities does ابن عبدل show in the above passage, and what qualities of character ?

5. (a) Explain in Arabic the following passage:—

16

تعلقها هرى قيس الليلى * واصلها فليس به سقام
يروع ركانة و يذوب ظرفا * فما ندرى أشيخ ام غلام
و تملكه المسائل فى نداه * و اما فى الجدال فما يرام
و قبض نواله شرف و عز * و قبض نوال بعض القوم ذام
اقامت فى الرقاب له ايام * هى الاطواق و الناس الحمام
اذا عد الكرام فتلك عجل * كما الانواء حين تعد عام

(b) Write notes in English on the expressions underlined in this passage.

(c) Write down six oaths in common use among the early Arabs, and explain their signification, and write a note on the prevalence of the use of oaths among them.

6. (a) Translate into English:—

18

جرى لها الغال نحسا يوم انقرة * اذ غودرت رحشة السحبات و الرحب
لما رات اختها بالامس قد خربت * كان الخراب لها اعدى من الجرب
كم بين حيطانها من فارس بطل * قانى الذوائب من أنى دم سرب
بسنة السيف و الخطى من دمه * لا سنة الدين و الاسلام مختضب
لقد تركت امير المؤمنين بها * للثار يوما ذليل الصخر و الخشب

(b) What is the historical situation referred to in this poem?

(c) Scan one bayt only in the passage in Question 6 (a) and name its metre.

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. (a) Translate into English :—

15

(تسبح له) تذكروا (السموات السبع و الأرض و من فيهن و ان) ما (من شئ) من المخلوقات (الا يسبح) متلبسا (بحمده) اي يقلل سبحانه الله و بحمده (و لكن لا تفقهون) تفهمون (تسبيحهم) لانه ليس بلغتهم (انه كان حليما غفورا) حيث لم يعاجلكم بالعقوبة (و اذا قرأت القرآن جعلنا بينك و بين الذين لا يؤمنون بالآخرة حجابا مستورا) اي ساترا لك عنهم فلا يرونك - و نزل فيمن اراد الفتك به صلى الله عليه و سلم (و جعلنا على قلوبهم اكنة) اغطية (ان يفقهوه) من ان يفهموا القرآن اي فلا يفهمونه (و في آذانهم و قرا) ثقلا فلا يسمعون (و اذا ذكرت ربك في القرآن وحده ولوا على ادبارهم نفورا)
عنه *

(b) Point out the force in the use of مستورا, instead of ساترا, in حجابا مستورا in the above extract. 3

(c) Explain fully اراد الفتك به صلى الله عليه و سلم in the above passage. 4

(d) Give the grammatical construction of اذ, and point out when the use of ف after it is compulsory and when only permissible. Illustrate your answer with examples. 6

(e) Give the force of كان, in انه كان حليما غفورا in the above extract. Are انفعال تامه and صار ever used as كان? 5

2. (a) Translate into English with reference to the context :— 15

و من نقد الاشياء بعين المعقول و انعم النظر في مباني الاصول نظم هذه المقامات في سلك الافادات و سلكها في سلك الموضوعات عن العجومات و الجمادات و لم يسمع بمن نبا سمعه عن تلك الحكايات او اثم وقتها في وقت من الاوقات - ثم اذا كانت الاعمال بالنيات و به انعقاد العقود الدينيات فأي حرج على من انشأ مَلَكًا للتنبيه لا للتمويه و نحابها منحنى التهذيب لا الاكاذيب و هل هو في ذلك الا بمنزلة من انتدب لتعالم او هدي الى صراط مستقيم *

على انني راض بان احمل الهوى - و اخلص منه لا على ولا ليا و بالله اعتضد فيما اعتمد و اعتصم مما يصم و استرشد الى ما يرشد فما المفزع الا اليه و لا الاسعانة الا به و لا الترفيق الا منه و لا المؤئل الا هو عليه توكلت و اليه انيب و به نستعين و هو نعم المعين *

- (b) Re-write the above passage with all the vowel-points. 5

- (c) Differentiate between the significance of any three of the following :— 5

(i) مُسْتَقِيمٌ, مُقِيمٌ, قَائِمٌ

(ii) عَمَدٌ, اِعْتَمَدَ, عَمِدَ

(iii) تَعَقَّدَ, اِنْعَقَدَ, عَقْدٌ

(iv) تَخَالَصَ, اَخْلَصَ, خَاصَّ

(v) اسْتَقَالَ, اِقَالَ, قَال

3. Give in your own Arabic a brief description of خلافة أبي جعفر المنصور 15

4. Give a brief sketch of the character of عمر بن عبد العزيز . 7

5. Translate into English with reference to the context :— 10

ثم قال اني ارى في هذه المدينة الامر بالمعروف والنهي عن المنكر متروكا ولست ارى من لا ياخذ في الله لومة لائم غيرك و اخرج من دار قميصا غسل مرارا و عمامة عتيقة و اركبه على دابة و غلمان الاحتساب في خدمت و كل من سمع بهذا استحسن و صار السرنديبي محتبسا - فاذا في بعض الايام جاء شخص الى السرنديبي و قال في مرضع كذا جماعة يشربون فقام باصحابه و ذهب اليهم اراق خمورهم و كسر ملاهيهم و كان القوم صبيانا جهالا قاموا اليه و ضربوه و ضربوا اصحابه ضربا و جيعا - فجاء السرنديبي الى القاضي و عرفه ذلك فالقاضي غضب و حرق و قال ابصروا من كانوا اولئك فقال ما نعرف منهم احدا *

6. (a) Write notes on the words underlined in the above passage. 4

(b) Correct or justify any four of the following, giving reasons for your answers :— 6

(١) وَجَدْتُهُمْ قَائِمَةً (٢) كَيْفَ كَانَ حَالُكَ

(٣) تَمَزَّقَ السَّمَاءُ (٤) لَيْسَ زَيْدًا قَائِمًا

(٥) عَادَ عَلَى مَنْزِلِهِ (٦) قَلْتُ الْيَهُودَ

THIRD PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English any *two* of the following extracts :—

35

A

قُمْ فِي الدُّجَى يَا أَيُّهَا الْمَتَعَبُ * حَتَّى مَتَى فَوْقَ السَّيْرِ تَرُدُّ
 قُمْ رَادُّ مَوْلَاكَ الَّذِي خَلَقَ الدُّجَى * وَالصَّبْحَ وَامْضِ فَقَدْ دَعَاكَ الْمَسْجِدُ
 وَانْدِمِ عَلَى مَا فَاتَ وَالذَّبَّ مَا مَضَى * بِالْأَمْسِ وَادْكُرْ مَا يَجِيءُ بِهِ الْغَدُ
 وَاسْتَغْفِرِ اللَّهَ الْعَظِيمَ بِنَلَّةٍ * وَاطْلُبْ رِضَاهُ فَإِنَّهُ لَا يَحْقُقُ
 وَاضْرَعْ رَقْلَ يَا رَبِّ عَفْوِكَ إِنِّي * مِنْ دُونَ عَفْوِكَ لَيْسَ لِي مَا يَعْضُدُ
 أَسْفًا عَلَى عَمْرِ الَّذِي ضَيَّعْتُ * تَحْتَ الذُّبَابِ وَأَنْتَ فَوْقِي تَرْمِدُ
 يَا رَبِّ لَمْ أَحْسِبْ مَرَارَةً مَصْدَرٍ * عَنْ زَلَّةٍ قَدْ طَابَ مِنْهَا الْمَوْرِدُ
 يَا رَبِّ إِنْ أَبْعَدْتُ عَنْكَ فَإِنْ لِي * طَمَعًا بِرَحْمَتِكَ الَّتِي لَا تَبْعُدُ
 يَا رَبِّ قَدْ عَبَثَ الْبَيَاضُ بِلَمَمَتِي * لَكِنْ وَجَّهِي بِالْمَعَاصِي أَسْرُدُ
 يَا رَبِّ قَدْ ثَقُلْتُ عَلَى كِبَائِرٍ * بِأَزَاءٍ عَيْنِي لَمْ تَزُلْ تَتَرَدَّدُ
 أَنْتَ الْمَجِيبُ لِكُلِّ دَاعٍ يَلْتَجِي * أَنْتَ الْمَجِيرُ لِكُلِّ مَنْ يَسْتَنْجِدُ
 مِنْ أَيْ بَحْرِ غَيْرِ بِحَرِّكَ نَسْنَقِي * وَالْأَيَّ بَابٍ غَيْرِ بِأَبْكَ نَقْصِدُ

B

35

وَوَسَّوْ
(الغراب و البجرة)

عَطَشَ غُرَابٌ وَ ارَادَ الشُّرْبَ وَ طَفِقَ يَبْحَثُ عَنْ مَاءٍ فِي كُلِّ مَا جَارَهُ
مِنْ الْجِبَاهِ فَخَابَ سَعْيُهُ وَ لَمْ يَجِدْ إِلَّا جِرَّةً فِي قَعْرِهَا قَلِيلٌ مِنَ الْمَاءِ لَمْ
يَقْدِرْ أَنْ يَصَلَ إِلَيْهِ لُبَعْدِ غُرُهَا وَ لِيَطُولَ عَنَقُهَا وَ لَكِنْ الْعَطَشُ اشْتَدَّ بِهِ فَأَعْمَلَ
فِكْرَهُ فِي تَدْبِيرِ حِيلَةٍ يَرْفَعُ بِهَا الْمَاءَ إِلَيْهِ مَا دَامَ هُوَ غَيْرَ قَادِرٍ عَلَى السُّوْءِ
إِلَى الْمَاءِ فَصَمَّمَ عَلَى أَنْ يَتْرَكَ الْمَكَانَ حَتَّى يَشْرَبَ مِنْ تِلْكَ الْجِرَّةِ وَ قَالَ
فِي نَفْسِهِ إِذَا صَدَقَ الْعَزْمُ رَضِيَ السَّبِيلُ *

عِنْدَ ذَلِكَ اُلْتَفَتَ حَوْلَهُ فَرَأَى حِجَارَةً صَغِيرَةً كَثِيرَةً فَذَهَبَ إِلَيْهَا وَ اخَذَ
وَاحِدًا بِمُتْقَارِهِ وَ رَمَاهُ فِي الْجِرَّةِ فَارْتَفَعَ الْمَاءُ قَلِيلًا فَعَادَ وَ جَاءَ بِغَيْرِهِ فَزَادَ ارْتِفَاعُ
الْمَاءِ فَأَدْرَكَ أَنَّهُ إِذَا اسْتَمَرَّ عَلَى عَمَلِهِ هَذَا وَ دَابَّ عَلَيْهِ بَلَغَ غَايَتُهُ وَ أَطْفَأَ حَرَارَتَهُ
عَطَشُهُ فَلَبِثَ يَنْقُلُ الْحِجَارَةَ وَ يَرْمِيهَا فِي جَوْفِ الْجِرَّةِ وَ الْمَاءُ يَرْتَفِعُ فِيهَا قَلِيلًا
قَلِيلًا حَتَّى امْكُنَهُ أَنْ يَصَلَ إِلَيْهِ أَخِيرًا فَشَرِبَ حَتَّى رَوَى بَعْدَ صَبْرِهِ وَ جَدَّهِ وَ
كَذَلِكَ (كُلُّ مَنْ جَدَّ وَ جَدَّ) *

C

(الشجاعة و الجبن)

خَرَجَ رَمَضَانُ وَ سُلَيْمَانٌ يَتَمَشَّيَانِ فَرَابَا مَعْرَكَةً فِي الطَّرِيقِ وَ طَلَبَ سُلَيْمَانُ
 مِنْ رَمَضَانَ أَنْ يَفْتِكَ مَعَهُ لِيَسْرِيَا مَا يَكُونُ مِنْ أَمْرِهَا فَأَبَى رَمَضَانُ إِلَّا مُتَابَعَةً
 السَّيْرِ خَوْفَ أَنْ يُلْحَقَهُمَا أَذَى وَ لَيْسَ لِهَما دَخْلٌ فِيهَا فَالْتَمَعَ سُلَيْمَانُ عَلَى
 رَفِيقِهِ الَّذِي مَا زَالَ مُصِرًّا عَلَى مُتَابَعَةِ السَّيْرِ فَغَضِبَ سُلَيْمَانُ وَ رَمَى رَمَضَانَ
 بِالْجَبْنِ وَ افْتَرَقَا *

و بَعْدَ ذَلِكَ صَارَ سُلَيْمَانُ وَ بَعْضُ خَاصَّتِهِ يَسْتَحِرُّونَ مِنْ رَمَضَانَ وَ يَغَيِّرُونَهُ
 بِالْجَبْنِ وَ لَكِنَّ رَمَضَانَ تَحَمَّلَ أَذَاهُمْ بِالصَّبْرِ الْجَمِيلِ لِعِلْمِهِ أَنَّهُ لَيْسَ مِنْ
 الشَّجَاعَةِ أَنْ يُسَلِّقِيَ الْمَرْءُ بِنَفْسِهِ فِي التَّهْلُكَةِ عَلَى غَيْرِ طَائِلٍ وَ سَتَظْهَرُ الْيَوْمَ
 مَبْلَغُ شَجَاعَتِهِ يَوْمَ مَا وَ بَعْدَ ذَلِكَ بَايَامُ اتَّفَقَ أَنَّ سُلَيْمَانَ كَانَ يَسْتَحِمُّ مَعَ
 رَفِيقَائِهِ وَ تَجَارِزَ حَدَّ مِثْلَةِ الْإِسْتِحْمَامِ فَتَعَبَ وَ صَارَ يَغِطُّسُ وَ يَطْفُو وَ يَصْرُخُ
 مُسْتَعِيثًا بِأَخْوَانِهِ الَّذِينَ كَانُوا مِثْلَهُ يَنْتَبَاهُونَ بِشَجَاعَةٍ لَيْسَتْ فِيهِمْ وَ لَكِنَّهُمْ
 تَرَكُوهُ وَ هَرَبُوا وَ لَمَّا رَأَى رَمَضَانُ وَ هُوَ عَلَى الشَّاطِئِ مَا حَلَّ بِسُلَيْمَانَ خَلَعَ
 مِرَالِيْسَهُ بِغَايَةِ السَّرْعَةِ وَ ثَبَّ فِي الْمَاءِ وَ سَبَحَ وَ خَاطَرَ بِتَنْفُسِهِ لِيُخَلِّصَهُ
 بَعْدَ الْجُهْدِ الْعَظِيمِ أَخْرَجَهُ سَالِمًا *

و بهذا العمل خَجَلَ سَلِيمَانُ وَ رَفَأَهُ مِنْ تَعَدِّيهِمْ عَلَى رَمْضَانَ وَ اعْتَرَفُوا
لَهُ بِأَنَّهُ أَكْثَرُهُمْ شَجَاعَةً وَ أَقْدَامًا *

2. Translate into Arabic :—

30

When Shams-ud-Daula had reduced the province of Yaman to tranquillity and caused it to submit to his authority, he felt a dislike to residing in that country, having been brought up in Syria, a land of abundance, whilst Yaman was a sterile region, deprived of every advantage. He wrote to his brother offering his resignation and asking permission to return to Syria. He complained in this letter of the sufferings he underwent in being deprived of the ordinary conveniences of life. Salāh-ud-Dīn in reply wrote encouraging him to remain in a country possessed of so much wealth.

FOURTH PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate any three of the following passages into English :— 15

(a)

تصد و تدبى عن اسيل و تتقى * بناظرة من وحش رجوة مطفل
و جيد كجيد الرئم ليس بفادش * اذا هى تصسته رلا ببعطل
و فرع يزبن المتن اسود فادم * اثيث كفنو النخله المتعشل
غداؤها مستشزرات الى العلى * تضل العقاص فى مثنى و مرسل
و كشم لطيف كالجديل مختصر * و ساق كانبوب السقى المذل

(b)

و مر على القنن من نفيانه * فانزل منه العصم من كل منزل
و تيماء لم يترك بها جذع نخلة * و لا اطما الا مشيدا بجندل
كان ثبيرا فى عرائين ريله * كبير اناس فى بجاد مزمل

كل ذرى راس المجيمر غدوة * من السيل والغشاء فلكة مغزل
و القى بصحراء الغبيط بعاهه * نزول اليماني ذى العياب المحمل

(c)

فتتنازعا سبطا يطير ظلاله * كدخان مشعلة يشب ضرامها
مشمولة غلثت بنابست عرفج * كدخان نار ساطع اسنمها
فمضى و قدمها و كانت عادة * منه اذا هى عردت اقدامها
فتمسقا عرض السرى و صدعا * مسجورة متجارر اقلامها
محفرة وسط اليراع يظلمها * منه مصرع غابة و قيامها

(d)

لكنها خلة قد سيط من دمها * فجع و رلع و اخلاف و تبديل
فما تدرم على حال تكون بها * كما تلون فى اثوابها الغول
ولا تمسك بالعهد الذى زعمت * الا كما تمسك الماء الغرايل
فلا يغزلك ما منت وما وعدت * ان الامانى و الاحلام تضليل
كانت مراعيد عرقوب لها مثلا * و ما موعيدها الا الابطال

2. (a) Doubts about the authenticity of the *Mu'allaqāt* have been expressed by modern critics. Do you or do you not consider them justified? State your reasons. 8

(b) Give the names of all the poets who composed a *Mu'allaqa* and write a biographical sketch of one of them. 6

(c) State the numbers of the following words, giving in each case the form of the opposite number :— 4

باطيل - احليل - اراجيل - اقاريل - غول - مراسيل - نشارى - عذارى -

صحراء - اليماني

3. Explain with reference to the context any two of the following extracts :—

16

(a)

راها على ذلك الزمان وما حوا * طيب المكان بغفلته السقبا
ايام اربع فى ميادين المنى * جذلا و ارفل فى ذيل حياء
ما اعجب الايام توجب للفتى * منذها و تمحنه بسلب عطاء
اهل لماضى عيشنا من عودة * يوم و اسمع بعده ببقائى
هيهات خاب السعى وانقصمت عرى * حبل للمنى وانحل عقد رجائى
و كفى غراما ان بيت مئىما * شوقى امامى و القضاء ورائى

(b)

شربنا على ذكر الحبيب مدامة * سكرنا بها من قبل ان يخلق الكرم
لها البدر كس وهى شمس يديها * هلال وكم يبدو اذا مزجت نجم
و لولا سناها ما اهتديت لكانها * و لولا سناها ما تصورها الوهم
و لم يبق منها الدهر غير حشاشة * كان خفاها فى صدور النهى كتم
فان ذكرت فى الحى اشبح اهلها * نشاوى و لا عار عليهم و لا اثم
و من بين احشاء الدنان تصاعدت * و لم يبق منها فى الحقيقة الا اسم

(c)

يقولون لى صفها فانت برصوفها * خبير اجل عندى باوصافها علم
صفاء و لا ماء و لطف و لا هوا * و نور و لا نار و روح و لا جسم
تقدم كل الكائنات حديثها * قديما و لا شكل هناك و لا رسم
و قامت بها الاشياء ثم لحكمة * بها احتجبت عن كل من لا له فهم
و هامت بها روحى بحيث تمازجا * انكادا و لا جرم تسخلله جرم

4. Answer any *two* of the following questions :—

14

(a) Expound with examples (as far as possible) the particularities of Ibn al-Fāriḍ's style.

(b) Give an account of the Arabic Ṣūfī poetry with special reference to Ibn al-Fāriḍ.

(c) Is the Ṣūfī doctrine of the 'Perfect Man' (*al-insān al-kāmil*) consistent with orthodox faith? State your reasons.

(d) Compare Ka'b b. Zuhair's *بانت سعاد* with al-Būṣīrī's *قصيدة البردة*.

5. Paraphrase in clear and simple Arabic any *two* of the following :— 12

وقد اغتدى و الطير فى ركائتها * بمنجرد قيد الارباب هيكـل
مكر مفر مقبل مدبر معا * كجلمود صخر حطه السيل من عل
كميت يزل اللبد عن حال منذه * كما زلت الصغواء بالمتنزل
(b)

لقد شربت من المدامة بعد ما * ركد السواجر بالمشرف المعلم
بزجاجة صفراء ذات اسرة * قزنت باظهر فى الشمال مقدم
فاذا شربت فاننى مستهلك * مالى و عرضى رافى لم يكلم
(c)

امست سعاد نارض لا تبغها * الا العناق السنجيبات مراسيل
و لن تبغها الا عذافرة * فيها على الين ارقال وتبغيل
من كل نضاجة الذفرى اذا عرقت * عرضتها طامس الاعلام مجهول

6. Re-write extract (c) of Question 1 with full vowel-points. 5

7. Translate into Arabic :—

20

When Bābur became Emperor, North India generally was under Muḥammadan rule. It was then, too, that the Muḥammadan kingdoms of Aḥmadnagar, Bijāpūr, and Golconda were founded. These kingdoms, however, exhausted their energies in internal quarrels and when the Mughal Emperors turned to them they fell one by one. The Mughal dynasty was distinguished by extraordinary outward splendour and no dynasty, perhaps, since the world began, ever produced six princes so great as Bābur, Humāyūn, Akbar, Jahāngīr, Shāh Jahān, and Aurangzeb, whose united reigns covered a period of nearly 200 years, 1526—1707.

FIFTH PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English :—

25

(ر الصافات صفا فالزاجرات زجرا فالتاليات ذكرا) اقسم بالملائكة الصائنين فى مقام العبودية على مراتب باعتبارها تفيض عليهم الانوار الالهية منتظرين لامر الله الزاجرين الاجرام العلوية و السفلية بالتدبير المأمور به فيها او الناس عن المعاصى بالهام الخير او الشياطين عن التعرض لهم التالىين آيات الله و جلاليه قدسه على انبيائه و اوليائه او بطوائف الاجرام المرتبه كالصفوف المرصومة الراجح المدبرة لها و الجواهر القدسية المستغرقة فى بحار القدس يسبحون الليل و النهار لا يفترون او بنفوس العلماء الصائنين فى العبادات الزاجرين عن الكفر و الفسوق بالحجج و النصائح التالىين آيات الله و شرائعه او بنفوس الغزاة الصائنين فى الجهاد الزاجرين الخيل او العدو التالىين ذكر الله لا يشغلهم عند مباداة العدو و العطف لا خذلاف الذوات او الصفات و الفاء لترتيب الوجود كقولہ :—

يا لهف زبابة للحارث الصابح فالغانم فالآئب

2. Reproduce in simple Arabic Ibn Hishām's account of 'Amr b. 'Āmir's departure from Yaman, and the story of the Dam of Ma'rib

(امر عمرو بن عامر فى خروجه من اليمن و قصة سد مأرب)

3. Who was Luqmān ? Write a full note on Luqmān after the manner of Zamakhsharī. 10

4. Give the substance of Ibn Khaldūn's classification of human souls (اصناف النفوس البشرية). 15

5. Explain and illustrate the following :—

15

الاستعارة التحقيقية - الاستعارة التخيلية - الاستعارة بالكناية

6. Translate into Arabic :—

20

While they row, the men sing the songs of the Nile ; and their voices ring out very clear and sweet across the still waters. The songs they sing are the same as have been sung on this river for many, many years. They have been handed down from father to son since the ages of long ago. Before us lies the blue river, winding among the palm trees which, on the banks on either side, sway lightly in the breeze. Very soft and green they look against the miles of sand beyond, which stretch as far as eye can see

SIXTH PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

B

RHETORIC AND PROSODY

Answer any THREE questions.

1. Scan the following and name the metre :— 10

جراحات السنان لها الثمام ولا يلتام ما جرح اللسان

2. Define (a) عروض ; (b) ضرب ; (c) زحاف ; (d) روى Give examples of each. 10

3. Define تشبيه and state its four essential constituents (اركان اربعة). Illustrate your answer with examples. 10

4. Elucidate and illustrate the following :—(a) تلميح ; (b) تفریق ; (c) تجنیس تام ; (d) استطراد. 10

B

HISTORY OF ARABIC LITERATURE

Answer any FOUR questions.

1. Give a brief account of poetry in pre-Islamic Arabia. 10
 2. Estimate the historical and literary value of the Qur'ān. 10
 3. Give an account of the literary achievements of the Arabs in Europe. 10
 4. Trace the rise and development of free-thought and rationalism in Islam. 10
 5. Write notes on any four of the following :—(a) al-Jāhiliyya (b) Farazdaq ; (c) al-Shu'ubīyya ; (d) Ibn Khallikān ; (e) Luṣūmu mā lā ya'lam. 10

C

MUSLIM HISTORY

Answer any THREE questions.

1. Describe the battle of Badr and estimate its importance in the early struggles of Islam. 10
2. Compare the causes of the downfall of the 'Umayyads and the 'Abbāsids. 10
3. Give an account of arts, letters, and science, under the Fāṭimids of Egypt. 10
4. Write notes on any four of the following :—(a) The Hijrat ; (b) The Battle of the Camel ; (c) Nizām-ul-mulk ; (d) Ṣalāh-ud-din ; (e) al-Muqanna'. 10

ARABIC—PASS

Examiners:—MAULVI A. F. M. ABDUL KADIR, M. A.
KHAN BAHADUR MD. HASSAN.

FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English the following passages:—

18

(a)

تَذَرُوبُ هُنَ الذَّنُوبَ إِذَا مَرَضَتْ * وَ تَرْجِعُ لِلذَّنُوبِ إِذَا بَرِيَتْ

إِذَا مَا الضَّرَّ مَسَّكَ أَنْتَ بَاكَ * وَ اخْبَثَ مَا يَكُنْ إِذَا قَرِيَتْ

فَكَمْ مِنْ كَرِيَّةٍ نَجَّاهُ مِنْهَا * وَ كَمْ كَشَفَ إِبْلَاءَ إِذَا بَلِيَتْ

وَ كَمْ غَطَاكَ فِي ذَنْبٍ وَ عَنَّهُ * مَدَى الْإِيَّامِ جَهْرًا قَدْ نَهَيْتَ

أَمَّا تَخْشَى بَانَ تَأْتِي الْمُنَابَا * وَ أَنْتَ عَلَى الْخَطَايَا قَدْ دَهَيْتَ

(b)

كُلُّ يَوْمٍ يَأْتِي بِرِزْقٍ جَدِيدٍ * مَنْ مَلَكَ لَنَا غَنًى حَمِيدٍ
 قَاهِرٌ قَاهِرٌ رَحِيمٌ لَطِيفٌ * ظَاهِرٌ بَاطِنٌ قَرِيبٌ بَعِيدٌ
 حُجَّةُ الْغَيْبِ عَنْ كُلِّ عَيْنٍ * وَهُوَ فِيهَا أَنْسَ لِكُلِّ وَحِيدٍ
 حَسْبُنَا اللَّهُ رَبَّنَا هُوَ مَوْلَى * خَيْرٌ مَوْلَى وَنَحْنُ شَرٌّ عَبْدٌ

(c)

من الطويل

إِلَى اللَّهِ كُلُّ الْأَمْرِ فِي الْخَلْقِ كُلِّهِ * وَلَيْسَ إِلَى الْمَخْلُوقِ شَيْءٌ مِنَ الْأَمْرِ
 إِذَا أَنَا لَمْ أَقْبَلْ مِنَ الدَّهْرِ كَلِمًا * تَكْرَهْتَ مِنْهُ طَالَ عَتَبِي عَلَى الدَّهْرِ

(d)

هَلْ أَنْتَ مَعْتَبَرٌ بِمَنْ خَرَبْتَ * مِنْهُ نَذَاةٌ قَضَى دَسَاكِرَهُ
 وَبِمَنْ خَلْتَ مِنْهُ اسْرَّتَهُ * وَبِمَنْ خَلْتَ مِنْهُ مَنَابِرَهُ
 وَبِمَنْ خَلْتَ مِنْهُ مَدَائِنَهُ * وَتَفَرَّقْتَ مِنْهُ عَسَاكِرَهُ

2. (a) Write notes on six of the underlined words and expressions in Question 1. 16

(b) Write out the three verses in Question 1 (d) with full vowel-points.

(c) Is a word of the form نَعِيلٌ active or passive in Arabic ?

3. (a) Explain the use of خَلِيلِي in the following *misra'* :— 12

خَلِيلِي إِنْ أَلِهَمَّ قَدْ يَنْفَرُجُ

(b) Write a short note on الأصمعي whose name is associated with the verses in Question 1 (d).

(c) Was the creed of Abu-l-'Atāhiya a joyless one ?

4. (a) Explain in *Arabic* the meaning of the following :—

18.

قضاة تعلم أنى الفتى الذى * ادخرت لصرور الزمان
ر مجدى يدل بنى خندق * على ان كل كرم يمانى
انا ابن المقاء انا ابن السخاء * انا ابن الضراب انا ابن الطعان
انا ابن الفيافى انا ابن القوافى * انا ابن السروج انا ابن الرعان
طويل النجاد طويل العماد * طويل القناة طويل اللسان

(b) Write notes on the expressions underlined.

(c) Either, Give the name of the author of the last passage, and explain how he came to get the designation by which he is usually known.

Or, Mention any rhetorical figures of speech occurring in this passage.

5. (a) Translate into English the following passages :—

18

(1)

ابلق ابا مسمع عنى مغلغة * رفى العتاب حيرة بين اقوام
ادخلت قباى قوماً لم يكن لهم * في الحق ان يدخلوا الابواب قدامى
او عدّ قبر و كنت اكرمهم * ميتا و ابعدهم من منزل الدام
فقد جعلت اذا ما حاجتى نزلت * بباب دارك ادلها باقوام

(2)

و العبد لا يطلب العلاء ولا * يعطيك شيئاً الا اذا رها
مثل الحمار الموقع السوء لا * يحسن مشياً الا اذا ضربا
و لم اجد عروة الخلائق الا * الدين اما اعتبرت والحسب
و قد يرزق الخائف المقيم وما * شدّ بعنفس رحلا و لا قتباً
و يعزم المال ذو المطية * و الرجل و من لا يزال مغترباً

(b) Write notes on the following :— ادلها ; the distinction between

عروة ; and حسب

(c) What kind of poems are included in the باب الحماسة State why this has been placed first in the كتاب الحماسة.

6. (a) Explain the following in Arabic prose :—

18

(۱)

بحق امرى بين الوليد قتاته * و كندة فوق السمّرقى يتصعد
اقول لحرف لم يدع رحلها لها * سناما و تشوير القطا و هى هجد
عليك فتى الناس الذى ان بلغته * فما بعده فى نائل متلد
و ان له نارين كلثهما لها * قوى دائم قدّام بيتيه توقد

(۲)

تصرح الدهر تصرّيج الغمام لها * عن يوم هيجاء منها طاهر جذب
لم تطلع الشمس فيه يوم ذاك على * بان باهل و لم تغرب على عزب

(b) Draw in English a distinction between يوم and نهار and give the various meanings of ليال and ايام

(c) Parse the word ميجانى and write a note on the book called ميجانى الادب

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English any two of the following :—

22

A

(ر قضى) امر (ردك ان) اى بان (لا تعبدوا الا اياه) و ان تحسنوا
(بالوالدين احسانا) بان تبرّهما (اما يبلغن عندك الكبر احدهما) فاعل
(او كلاهما) فى فزاة يبلغان فاحدهما بدل من الفه (فلا تقل لهما اف) بفتح
الفاء و كسرهما منونا و غير منون مصدر بمعنى تبا و قبحا (ولا تنهرهما) تنجرهما
(و قل لهما قولا كريما) جميلا ليناً (واخفض لهما جناح الذل) ان لهما

جانبك الذليل (من الرحمة) اي لوقتك عليهما (و قل رب ارحمهما كما)
 رحماني حيث (ربياني صغيرا) (ربكم اعلم بما في نفوسكم) من اضرار
 البرر العقوق (ان تكونوا صالحين) طالعبن الله تعالى (فانه كان للوابين) الرجاعين
 الى طاعته (غفورا) لما صدر منهم في حق الوالدين من بادرة وهم لا
 يضررون عقوقا (و ات) اعط (ذا القرني) القرابة (حقه) من البر و الصاة
 (و المسكين و ابن السبيل و لا تبذر تبذيرا) بانفاق في غير طاعة الله تعالى
 (ان المبذرين كانوا اخوان الشياطين) آى على طريقتهن (و كن الشيطان لربه
 نقورا) شديد الكفر لنعمه فكذلك اخوه المبذر *

B

فلما الحدوا الميت و فات قول ليت اشرف شيخ من رباوة مختصرا
 بهراوة وقد لفع وجهه بدائه و نكر شخصه لدعائه فقال لمثل هذا فليعمل
 العاملون فاذكروا ايها الغافلون و شمروا ايها المقصرون و احسنوا ايتهما
 المتبصرون ما لكم لا يحزنكم دفن الاقرب و لا يهولكم هيل التراب و لا
 تعبأون بدوازل الاحداث و لا تستندون لنزول الاجداث و لا تستعبرون لعين
 تدمع و لا تعتبرون بذعي يسمع و لا ترثعون لالف يفقد و لا تلتاعون لمناحة
 تعقد - يشيع احدكم نعش الميت و قلبه تلقاء البيت و يشهد مرارة نسيبه و
 فكرة في استخلاص نصيبه و يخلى بين روده و روده ثم يخلو بمزماره و عوده -
 طالما اسيتم على انثلام الحبة و تناسيتم احترام الا حبة و استنكذتم لاعتراض
 العسرة و استهفتم بانقراض الاسرة و ضحكتم عند الدفن و لا ضحككم ساعة الزفن
 و تبخرتم خلف الجنائز و لا تبختركم يوم قبض الجوايز و اعرضتم عن تعديد
 النوادب الى اعداد المآدب و عن تحرق الشواكل الى التألق في المآكل *

C

ثم قال : اوصيكم بتقوى الله فان تقوى الله خاف من كل شيء ، وليس من تقوى الله خلف ، واعملوا لا خرتكم فان من عمل لا خرتة كفاه الله امر دنياه و آخرته واصلحوا سرائركم يصلح علانيتكم واكثروا ذكر الموت واحسنوا له الاستعداد قبل ان ينزل بكسم فانه هادم المذات و اني والله لا اعطي احدا باطلا ولا امنع احدا حقا - يا ايها الناس من اطاع الله وجبت طاعته ومن عصى الله فلا طاعة له اطيعوني ما اطعت الله فان عصيت الله فلا طاعة لي عليكم - ثم نزل و دخل دار الخلافة فامر بالسور فهتكت و بالبسط فرفعت - و امر ببيع ذلك و ادخال اثمائه في بيت مال المسلمين ثم ذهب يتبوا مقبلا ، فاتاه ابنه فقال له ما تريد ان تصنع يا ابي قال : ابي بني اقبل - قال : تقيل و لا ترد المظالم - قال : ابي بندي اني قد سهت البارقة في امر عمك سليمان فاذا صليت الظهر رددت المظالم - فقال يا امير المؤمنين من اين لك ان تعيش الى الظهر - فقال ادن مني يا بني فدنا منه فقبله بين عينيه و قال الحمد لله الذي اخرج من الظهري من يعينني على ديني *

2. (a) Explain what is meant by مغة, بدل and عطف in Arabic grammar, and give examples of each and of their grammatical peculiarities. 6

(b) Give ما لكم لا يحزنكم دفن التراب of التركيب النحوي in Question 1, B. 4

(c) Write notes on the expressions :—ابن السبيل, جناح الذل, and اُف in Question 1, A. 3

(d) Correct or justify any five of the following, giving reasons for your answers :— 5

(١) لَيْسَ مِنْ تَقْوَى اللَّهِ الْخَلْفُ

(٢) إِنْ أَمَنْتَ قَدْ خَلَصْتَ

(٣) إِنْ تَدْرُسْ ۖ فَلَا تَخْشَرُ

(٤) ثَوْبٌ عَذْدَىٰ

(٥) يَعِيشُ النَّاسُ بِرَاحَةٍ إِلَّا الْكُسْلَانِ

(٦) جَاءَنِي السَّاكِرُ الشَّامِ

(٧) لَيْتَ الشَّبَابَ تَعُودُ

3. Explain with reference to the context :—

16

(a)

ما سلم الظبي علي حسنه * كلا ولا البدر الذي يوصف
الظبي فيه خنس بين * والبدر فيه كلف يعرف

(b)

فهناك يقبل ما تقول ويهتدى * بالقول منك وينفع التعليم
لا تنه عن خلق و تأتى مثله * عار عليك اذا فعلت عظيم

(c)

كانى بهذا القصر قد باد اهل * وعرى منه اهل و منازل
و صار رئيس القوم من بعد بهجة * الي جدت تبنى عليه جناده

(d)

فدعانا لم قبلناه الى الامر الرشيد
فعصيناه و نادينا اهل من محيد
فانتنا صيحة تهوى من الافق البعيد
فسوينا مثل زرع وسط بيداء حصيد

4. Describe **حضرت** briefly, according to **القزوينى**. 10

5. Render the following into simple Arabic :— 16

تعلموا العلم فان تعلمه الله حسنة ودراسته تسبيح و البحث عنه جهاد و طلبه عبادة و تعليمه صدقة و بذله لاهله قربة الله معالم الحلال و الحرام و بيان سبيل الجنة و المؤنس في الوحشة و المحدث في الخلوة و الجليس في الوحدة و الصاحب في الغربة و الدليل على السراء و المعين على الضراء و الزين عند الخلاء و السلاح على الاعداء و بالعلم يبلغ العبد منازل الاختيار في الدرجات العلى و مجالسه الملوك في الدنيا و مرافقة الابرار في الآخرة و الفسوف في العلم يعدل الصيام و مذاكرته تعدل القيام و بالعلم توصل الراحام و تفصل الاحكام و يعرف الحلال و الحرام و بالعلم يعرف الله و يوحد و بالعلم يطاع الله و يعبد *

6. (a) Give a brief description of **خلافة هارون** as it is given in your text. 9

(b) Write notes on any three of the following :— 9

المأمون - زكريا بن محمد القزوينى - ازم ذات العماد

THIRD PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English any two of the following extracts :—

٩٥ (١١) حكى ان دبكا وصقرا اصطحبا مدة ففى بعض الايام قال الصقر
لديك انى ما رأيت اقل و فاء و الا اضيع لحقوق الصحة منكم معاشر الديكة
فقال الديك ما الذى انكرته هذا قال لانى ارى الناس يكومونكم و يكسونون

اليك فى المطعم و المشرب و انتم تفررون منهم و تنفرون من قربهم و نحن
ياخذون الواحد منا فيعذبونه و يخيطنون عينيه و يمنعونه الطعام و الشراب ثم
يرسلونه فهذهب الى حيث لا يبقى لهم اليه وصول و لا عليه لهم قدرة ثم
يدعونه اليهم فيأتى مسرعا و يقتنص الصيد و الطير لهم - فلما سمع الديك
كلام الصقر ضحك ضحكا عاليا فقال الصقر ما يضحك ايها الديك فقال عجبت
من شدة جهلك و غرورك اما انك ايها الصقر لو عانيت من جئسك
جماعة فى كل يوم تسلم جلودهم و تقطع اعناقهم و يقلبون على الذار و يطبخون
فى القدور لفررت منهم اشد الفرار و لم يستقر لك بصحبتهم قرر و لو قدرت
لطرت الى جوار السماء و علمت انه لا فائدة فى القرب منهم و ان السلامة فى
البعد عنهم فعرف الصقر صدق كلامه و اقلع عن مرامله *

35 (1) اخوانى اعلما ان عمل فى الايام خيرا حمد امره و من اقترب
فيها شرا اضاع عمره سيندم غدا من قصر على تصغيره و يتلهف من ترك
العمل لمصيره و يبكى هاجرا لهى بعد تبصيره انما هى اوقات مبادرة تذهب
و اغتنام ايام تذهب فبادر بعمرك قبل الفوت و اغنم حياتك قبل الموت
يا من يعصى مولاه على ما يريد و يبارزه بالمعاصى و هو اقرب اليه من جبل
الورد و هو فى دار الراح لا يكسب و لا يستفيد و لا يشوفه الوعد و لا يخوفه الوعيد
امله طويل و ليس العمر بمديد و المواعظ تفرح القلوب فتجدها اقصى من
الصخور و اصلب من الحديد تيقظ يا مغرور و فهم يا بليد فالامل طويل و الامن
غريب شريد و طريق العقاب بعيد مديد كيف ترجو البقاء فى دار الفناء و الرحيل
تأمل الرضا و الزمان قد مضى فى غير الجميل اعددت الجواب و قد علمت
ان الحساب يأتى على الكثير و القليل فالى متى تصنيع الرقت الشريف و
حتى متى تنقرب الى الملك اللطيف *

(c) 35

لك الحمد يا من فضله متوازن * ر يا من له جود عميم و غامر
 لك الحمد متى فاقبل الحمد اننى * لجودك و الاحسان و الفضل ذاكر
 لقد جدت انعاما على و مدة * و فضلا و احسانا فها انا شاكر
 و كل الورى من بحر جودك ناهل * و انت لهم عذ الشدايد ناصر
 و خولتنا يا رب آثار نعمة * و اسبغتها يا من لذى غافر
 بجاء الذى قد جاء للناس رحمة * نبى كريم صادق القول طاهر
 عليه صلوة الله ثم سلامه * و انصارة و الآل ما زار زائر
 و اصحابه الغر السرام اولى النهى * مدى الدهر ما غنى على الايك طائر

2. Translate into Arabic:—

30

Algiers is one of the biggest and best known towns in this land. A 'City of Sunshine' it is sometimes called; and I am sure you would think so, if you saw it on a bright, sunny day. The bluest of blue skies above, blue sea as far as eye can reach on the one side, on the other a town with houses bathed in golden sunshine, and above and beyond them dim blue mountains with purple hues—such is the lovely scene on which one looks.

PERSIAN

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FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English, adding explanatory notes where necessary :— 10

در ازل پرتو حسنت ز تجلی دم زد
 عشق پیدا شد و آتش بهمه عالم زد
 جلوه کرد رخت دید ملی عشق نداشت
 عین آتش شد ازین غیرت و بر آدم زد
 عقل میخواست کزان شعله چراغ افروز زد
 برق غیرت بدرخشید و جهان برهم زد
 مدعی خواست که آید بتماشا که راز
 دست غیب آمد و در سینۀ فامحرم زد
 دیگران قرعۀ قسمت همه بر عیش زدند
 دل غم دیده ما بود که هم برغم زد
 جان علوی هوس چاه زنگدان تو داشت
 دست در حلقۀ آن زلف خم اندر خم زد
 نظری کرد که ببیند بجهان صورت خویش
 خیمه در آب و گل مزرعۀ آدم زد
 حافظ آن روز طریقه عشق تو نوشت
 که قلم بر سر اسباب دل خرم زد

2. Amplify the idea contained in any *three* of the following verses :— 15

(a)

اینهمه عکس می و نقش مخالف که نمود
 یک فروغ رخ ساقیست که در جام افتاد

(b)

هنگام تنگ دستی در عیش کوش و مستی
 کاین بیمیای هستی قارون کند گداری

(c)

جنگ هفتاد و دو علت همرا عذر بنه
چون ندیدند حقیقت در افسانه زدند

(d)

اگر کس عکس خورشید فلک در آبدان ببیند
نیارد گفت خورشید فلک در آبدانستی

(e)

در گردش است لعبت و لعب در کمین
در جنبش است خامه و نقاش در قفا

3. Write a critical note on the language, style, and diction of the *ghazals* of Hāfiẓ or *qasidas* of Qā'ānī. 12

4. Translate into English :—

15

(a)

ز سدره شد بمقامی که بود بیگانه
دران مقام تن از جان و جانش از پیکر
دو قوس دایره در ملتقای نقطه امر
سراز دو سو بهم آورد چون خط پر گر
بعالمی شد کانجا نه اسم بود و نه رسم
بمعقلی شد کانجا نه خواب بود نه خور
وجود شاهد و مشهود اتحاد گزید
چو اتحاد فروغ بصر بذات بصر
نه اتحاد حلی که رای سوسطاً
بود بخیزد خردمند زشت و زار و هذر

(b)

رفت موسی بر طریق نیستی
گفت فرعون اش بگو تو کیستی
گفت من عقل رسول ذو الجلال
حجۃ الله ام امام از هر ظلال

گفت نی خامش رها کن گفتگو
نسبت و نام قدیمت را بگو
گفت موسی نسبتم از خاک دانش
نام اصلم کمترین بددگانش
مرجع این جسم خاکی هم ب خاک
مرجع تو هم ب خاک ای سهمناک

5. Answer any two of the following :—

12

(a) How are compound words formed in Persian? Give examples.

(b) Construct sentences showing different meanings of بار and باز

(c) Give the roots and root meanings of —

مخاد - رسواس - استعقاق - تکلیف - جلاب - جلاب - خباز - استغفا

6. (a) Explain in simple Persian :—

20

افلاک مطاوعش بیک فرمان
أفان مسغرش بیک ایما
کوهی که خورد قفای قهر او
آسیمه درد چو باد در بیدا
بادی که بود عطیع حزم او
همواره بود چو نره پا بر جا
درجانسوزی چو چرخ بی مهلت
درکین توزی چو دهر بی پروا
نه ملی مغلد ترا مقطع
نه ذات مؤید ترا عباد
زدشنة تو که تشنة خون است
بس کشته که پشته گشته در هیجا
توقیع ترا قدر برد فرمان
فرمان ترا قضا کند امضا
مد جمله بعمله زنی برهم
مد بقعه برقعہ کنی یغما

(b) In whose praise has Qā'ānī written the above *qasida*? Give a short account of his life in Persian.

7. Explain in Persian any *two* of the following lines with reference to the context :—

8

(a)

مـری کز چـرون پـرده نـردن شـود
چـرون هـمه اجـزات کـم شـد چـرون شـود

(b)

گفت الهی سوزن خود خواستم
داده از فضلت نشان راستم

(c)

هین زمین بپذیر بک چیز و بیار
پس زمین بستان عوض آنرا چهار

(d)

شکر شکن شوند همه طوطیان هزد
ابن قند پاری که به بنگاله میبرد

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English ;—

10

چون سلطان محمود ولایت عراق را بگرفت زنی با چهل کاروان دیرکچین بود - دزدان کالا را بردند - و این دزدان از کوچ و بلوچ بودند - و آن ولایت جایگاه پیوسته کرمانست - این زن پیش سلطان محمود رفت و تظلم کرد که دزدان کالا را من بردند دیرکچین - کالا را من باز ستان یا تاوان بده - سلطان محمود گفت دیرکچین کجا باشد - زن گفت ولایت چندان گیر که بدانی که چه داری و بحق آن برسی و نگاه توان داشت سلطان گفت راست می گوئی و لیکن دانی که دزدان از چه جنس بودند و از کجا آمدند - گفت از کوچ بودند از نزدیکی کرمان - گفت آن جایگاه دوردست است و از ولایت من بیرون - من بدیشان هیچ نه توانم کرد - زن گفت تو چه کدخدای جهان باشی که در

کنددائی خویش تصرف نه توانی کرد و چه شبانی که میش را از گرج نه توانی نگهداشت - پس چه من در ضعیفی و تنهایی و چه تو با این قوت و لشکر - معمود را آب در چشم آمد و گفت راست می گوئی - هم چنین کنم تا آن کالای تو بدهم و تدبیر این کار چنانکه توانم بکنم پس بفرمود تا زر از خزینه بزن دادند *

2. Answer any three of the following questions :—

15

(a) Write etymological notes on—

شبان - جایگاه - رباط

(b) Account for the use of چه wherever used in the extract in Question 1.

(c) Differentiate between خزانه and خزینه

(d) Comment on the formation of دوردست and illustrate your answer by examples.

3. Explain in Persian any two of the following :—

20

(a) شهرباریست که عرصه طول و عرض قلم و حکمش از حیث تصور بیرونست - و انتظام سلسله استحكام فرمانش از شائبه خلل و زوال مصون - مالى الملكيست که بمقتضى توتى الملك من تشاء باب بیت الشرف عزت بر چهره ارباب توفیق و سعادت نشاده و تیره بغتان زندان فارمانی و مغروران نغرت نفسانی از مصدوقه تذل من تشاء زنجیر خواری و ذلت بر پای خویش نهاده *

(b) شب زنده داران معبد آگاه دلی و عاکفان دار العباد هوشمندی که بمقتایم تعقیبات فرائض ابواب فتوحات چاروانی را بر چهره حال خود کشوده بمقتضای خیر اندیشی مدبر عقل گریبان اختیار را از سر پنجه تصرف خواهشها نفسانی حفظ نموده اند و توتیا ادب را موجب زیادتی روشنی دیده اخلاق صوری و معنوی دانسته اند - و تا خارس اشهب این طریقه ارجمند نگردیده بکعبه ادراک مراتب عزت و احترام نرسیده اند *

(c) مصطفی گفت همه عقلا عالم و حکما دنیا تطیر می کردند - پیغمبر ما محمد در حدیبیه تا شنید که رسول یا سفیر قدش سپید است فرمود کار ما سهل شد - اگر می خواهید یک کتاب از تاریخ تطیر معارف عالم به شما اقامه کنیم - گفتم مالتفت باشید آنچه انبیا و حکما می کردند تطیر نه بود و از جبین و ضعف آنها ناشی نمی شد برآه قوت قلب دیگران و ثبات عزم ایشان تفاؤل می نمودند *

4. Reproduce in your own Persian the discourse on نوازع as given in your text-book, and add to it your own thoughts on the subject. 10

5. Translate into English :—

15

دبیران نطق و بیان و ناظران معانی و حقائق و عرفان در صغیفه اخبار چنین نگارش داده اند که هنگامیکه خار صغرای شقارت و عصیان و سرگردان بادیه ضلالت و طغیان معرور سعادت هر دو کون فرعون مردود بی عون سلسله خذلان را از اسباب سرکشی و نافرمانی انتظام می داد و بمقتضای هوا و هوس نفس اماره مخالفت اندیش قدم در دشت بدبختی می نهاد و مطمح نظر بی بصیرت و مکنون صمیر خطا تصور ساختن بود نه معمار حکمش در کنار بحر نیل قصر بنا ندارد که شمع اش با خورشید دعوی هم چشمی نماید و ارتقاعش از سپهر برین زبردستی خواهد. - هر روز قریب چهار صد نفر استاد کامل با چندین هزار عمله و فعله دران قصر کار می کردند *

6. (a) Define سبب and فاصله and give examples of each. 6

(b) Scan either of the following verses and name the metre :— 4

(1)

اے صاحب درایت شکرانه سلامت * روزے تفقد کن درویش بی نوازا

(2)

آسمان بار امانت نه توانست بشید * قرعه فال بدام من دیوانه زند

7. Re-write in your own Persian, adding explanatory notes where necessary :— 20

اجساد موجودات را جسد دبیر مغناطیسی خلق کردم که همه اجسام بزرگ و کوچک را جذب کند و بقدر به چسباند - در اجساد کوچک قوه آفریدم که در مقابل جذب اجساد بزرگ دفاع نماید - و مقیاس شدت و ضعف جذب و دفع آنها را مربع مسافت قرب و بعد خود اجسام قرار دادم - فضالت آب روی زمین را به حرارت آفتاب امر به تبخیر نمودم و ذرات میاه تقطیده و ابخره مائی را به هوای نسیمی سپردم که هنگام اقتضا به صورت نم و باران به اراضی بریزد *

THIRD PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English :—

30

(a) شاهنشاه کار آگاه میرزا تقی خان را بصدارت اعظم باز داشت و روز تا روز تقویم عطمت او را تقدیم کرد چون میرزا تقی خان را اصلی منیف نبود الطاف شاهی را حمل نتوانست کرد و چون حشمت وزارت یافت و در مسند امارت جای گرفت نخستین عقل دور اندیش را پشت پای زد و کوه گرانسنگ را وزن کاه نمی نهاد و خرمن ماه را حشمت خاک نمیگذاشت بزرگ و بزرگان سترگ را که سالها سهل و صعب جهان را آزموده و جان و تن را بامتحانات ایام فرسوده شد و شرنگ زمانه را چشیده چندانکه توانست مغذول کرد و در زوایای خمول باز داشت و مردم پدر و مادر نشداخته را اختیار همی داد تا اعیان ایران را پوست بر تن زندان و عرو بر پیکر پیکان گشت و همه ابشان در بر انداختن او همدست و یکدل گشتند *

(b) درین بلادیکه تحت خط استوا واقع اند تقریباً شش ساعت بعد از نصف شب آفتاب طالع عیشود بنابراین حجاب طلعت شب زیاده از دو ساعت دیگر نمیتوانست میان ما و بیهارگان سیاه روز و اشرار باغی حایل باشد و نمیدانم درین دو ساعت وقت نا پرده از روی کار ما بر نیفتاده آیا پناه و ماء منی برای ما دست خواهد داد یا نه - من معذت دیده اگر بدتر ازین شب شبی نمیدیدم هم آئینه میگفتم در عالم هیچ بشری شبی بدین شومی صبح نکرده است - اما افسوس که در راه رنج و معذت این اول منزل من بود - هنوز از سواحل محیط بدبختی و غم بغمات آن راه نیافته و از لیالی سختی و ایام سیاه بختی خبری ندارم ما در روزگار حوادث ناگوار برای من آبستن است که هنوز اثری از آن پدیدار نیست و کهنه پرویز فلک چه بسیار خاک منزلت و خوار برای بیغتن بفرق من بیچاره در بر دارد که هنوز غباری از آن بر چهره من نه نشسته است *

2. Translate into English, adding explanatory notes :—

20

شبى بروشى از آفتاب روشن در
سپىل و پروىن تابنده اندرین معطر
شبى بعبادت روز شباب عیش انگیز
شبى بسیرت مبع وصال جان پرور

شبی افاضهٔ انوار اندرو پیدای
 شبی سعادت اجرام اندرو مضمیر
 رسول امی مشکوی ام هانی را
 نمود از رخ و لب رشک جنت و کوثر
 که جبرئیل امین خبستهٔ پیک خدای
 بامر ایزد دادار حلقه زد بر در
 زبانگ حلقه سر حلقهٔ انام از شوق
 بسان حلقه ندانست پای را از سر
 چو حلقه ساخت دل از یاد ماسوا خالی
 که تا ز حلقهٔ جیب فدا بر آرد سر
 درون حلقهٔ امکان نماند هیچ مقام
 نژو چو رشته نکرد از درون حلقهٔ گذر
 چو دل ز حلقهٔ امکان چو حلقه کرد تهی
 فکند بر رخ مه حلقها ز عنبر تر
 خطاب درد بپژئیل ای امین خدای
 بگو پیام چه داری ز ایزد داور

3. Translate into Persian:—

50

(a) The resolve to retire from Warsaw is a signal proof of the skill and determination with which Russian military policy is guided. The choice lay between sentiment and strategy. It must have been extremely repugnant to Russian feeling to abandon a pleasant and flourishing city to the tender mercies of the Germans. Not only is Warsaw a place of great charm but it is also an important commercial centre. It is a home of the iron and steel industry. Its clever workmen have built up a large trade in a variety of manufactures, ranging from plated silver to hosiery, gloves, and house decorations. The town is, moreover, a market for coal, leather, and corn.

(b) The night was dark and lowering, and well suited to the horrid scene about to be enacted. The sun, unusual in these climates, had set surrounded by clouds of the colour of blood; and, as the night advanced, they rolled on in unceasing thunders over the summits of the adjacent range of Albuz. At sudden intervals the moon was seen through the dense vapour, which covered her again as suddenly, and restored the night to its darkness and solemnity. I was seated lonely in the guard-room of the palace, when I heard the cries of the sentinels on the watch-towers, announcing midnight, and the voice of the muazzin from the mosque, the wild notes of whose chant, floating on the wind ran through my veins with the chilling creep of death, and announced to me that the hour of murder was at hand.

FOURTH PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English :—

(a)

14

جمله رسل بردش مفلس و طالب زکوة
 او شده تا ج رسل تاجر. صاحب نصاب
 عطسه او آدم ست عطسه آدم مسیح
 اینت خلف کز شرف عطسه او بود باب
 گشت زمین چون سفن چرخ چو کیمخت سبز
 تا ز پی تیغ او قبضه بندد و قزاق
 درخ خای درش کار دو صد دُرّه کرد
 راند بدان آفتاب بر ملکوت احتساب
 لا جرم از سهم آن بریط ناهید را
 بند رها وی کیست رفت بریشم ز تاب
 دیده نه روز بدرگان شه دین بدروار
 راند سپه در سپه سوی نشیب و عقاب
 بهر پلنگان دین کرد سراب از محیط
 بهر نهنگان کین کرد محیط از سراب

(b)

11

قدیم و محدث از هم خود جدا نیست
 که از هستیست باقی دائما نیست
 به آنست و این مانند عنقا است
 جز از حق جمله اسم بی مسماست
 عدم موجود گردد این مهال است
 وجود از روی هستی لا یزال است
 از آن این گردد و نه این شود آن
 همه اشکال گردد بر تو آسان

جهان خود جمله امر اعتباری ست
 چو آن یک نقطه کاندر دورساری ست
 بر روی یک نقطه آتش بگردان
 که بینی دائره از سرعت آن
 یکم گردن شمار آید بنفاچار
 نگردد واحد از اعداد بسیار
 حدیث مما سوی الله را رها کن
 بعقل خویش آنرا زین جدا کن

2. Explain these terms :—

8

لا یزال - مسمّا - محدث - روز بدر - ناهید - ملحد - نصاب - زکوة

3. Fully explain not more than ten of the following verses and the allusions contained in them :—

25

(a)

حامل رهی آمده کاعده یوم الظفر
 ای مملکان الغرات ای ثعلین المهاب

(b)

در حریم دعبه جان معرمان الیاس وار
 علم حضر و چشمه و ماهی بریان دیده اند

(c)

کعبه جان زان سوی نه شهر جوی و هفت ده
 کین دو جارا نفس اسیر و طبع دهقان دیده اند

(d)

بشکنند آن قدح عمه تن گردون ز ناز
 که بدست همه تسبیح ثریا بینند

(e)

ما و خاک پیء وادی سپران کز تف و نم
 آن شان مشعله دار و مژه سقا بینند

(f)

عموسی از بهر صفورا کند آتش خواهی
 وان شبانیش هم از بهر صفورا بینند

(g)

دست آهنگر مرا در مار ضحاک کشید
کنج افردن چه سود اندر دل دانای من

(h)

روژه کردم نذر چون مریم که هم مریم صفاست
خاطر روح القدس پیوند عیسی زای من

(i)

سامری سیرم نه موسی سیرتم تا زنده ام
در سم نوساله آلاید ید بیضای من

(j)

چند پیغاره که پیغوله غاری شدی
ای پیء غولان گرفته دوری صحرای من

(k)

ر ابتدا سرمامی و بابی نیاریدم چو طفل
زانکه هم عمامک زقینم بود و هم بابای من

(l)

شو بگلای اشک من خواب چنان ز عیبرست
تا بدو لاله در کشی جام گلاب عبهری

(m)

در عرفات بختیان بادیه کرده پی سپر
ما و تو بسپریم هم بادیه قلندری

(n)

شب مگر اندود خواهد بام گیتی را بقیر
کز بنات الدعش هستش نردبان انگیزته

(o)

خور بصرطان مانده تا معجون سرطانی کند
زانکه معلول ست و صفرا از رخاں انگیزته

4. Give an account of the author of the *گلشن راز*, and compare it in style and ideas with similar *mathnawīs* by other poets. It is said that the poem contains little logic but is full of illusory analogies. Do you agree with this criticism? Give your reasons. What is the theme of the poem? 12

5. Write in your own Persian :— 10

Either (a) A brief account of the poet Khāqānī and the names of imitators of his style, with your comments.

Or (b) The gist of the reply to the following question—

چه جزوست آنکه از کل فزون ست

طریق جستن آن جزو چون ست

6. Translate into Persian :— 20

The Arab invasion of Persia no doubt wrought much devastation and caused much suffering, but the Arabs were, in the words of their Spanish foes, 'knights and gentlemen, albeit Moors', and if they destroyed much, they brought much that was noble and admirable in its stead. The Mongols, on the other hand, surpassing in cruelty the most barbarous people, murdered in cold blood, in the conquered countries, men, women, and children; burned towns and villages; transformed flourishing lands into deserts; and yet were animated neither by hate nor vengeance, for indeed they hardly knew the names of the peoples whom they exterminated. One would suppose that history had exaggerated their atrocities, were not the annals of all countries in agreement on this point. After the conquest one sees the Mongols treat as slaves the feeble remnant of the conquered nations, and cause to groan under a frightful tyranny those whom the sword had spared.

FIFTH PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English :— 14

و شاعر باید که در مجلس معاشرت خوش رو -
و باید شعرا و بان درجه رسیده باشد که در مصیقه روزگار مسطور بود و به السنه و افواه
مشهور - و در سفاین بنویسند و در مداین بخوانند - که خط او فرو قسم افضل از شعر بقاء
اسم است - و تا معقرو مسطور نباشد آن را اثر نبرد و این معنی از او حاصل نیاید و
ش از خداوند خود بمیرد - و چون او را در بقاء خود اثری نیست در بقاء اسم دیگری
چه اثری باشد *

2. Answer in your own Persian any *two* of the following :— 16

(a) Re-write the story of Sultān-i-Maḥmūd and Abū Raiḥān-i-Birūnī, as given in the part of *Chahār Maqāla* dealing with astrology, and explain what light it throws on the character of Maḥmūd ?

(b) In the following couplets from your course, do you detect any error ? If so, how ?—

ازا چندان نعیم جاودانی * که مانند از آل سامان ال سامان
نای رودی مانده است و مدحش * نای باربد ماند است و دستن

(c) The author of *Akhlāq-Jalālī* places عرفا and اولیا in the same category with حکما. State his arguments and your view of the question.

3. Give a critical estimate of Akbar's character as disclosed by the extract from *Inshā-ī-Abu-l-Fazl* included in your course. 10

4. Answer either GROUP A or GROUP B

GROUP A

- (a) Translate into English :— 10

لَمَّا بَعَثَ اللَّهُ مُحَمَّدًا صَلَّى اللَّهُ عَلَيْهِ وَآلِهِ وَسَلَّمَ مَدَّتْ مِنْ اسْتِرَافِ السَّمْعِ وَفَعَالَتِ

“ لَا تَدْرِي أَسْرَأَيْدَ بَيْنَ أَهْلِ الْأَرْضِ أَمْ أَرَادَ بِهِمْ رَبُّهُمْ رَشَدًا ” — وَدَخَلَتْ قِبَائِلُ

عَنِ الْجَنِّ فِي دِينِهِ وَحَسَنَ اسْلَاحَهَا وَصَلَحَ الْأَعْرَبَ بَيْنَ الْمُسْلِمِينَ عَنْ أَوْلَادِ آدَمَ إِلَى

يُوعَا هَذَا — ثُمَّ قَالَ الْحَكِيمُ يَا عَشْرَ الْجَنِّ لَا تَدْعُرْهُمْ لَهْمَ وَلَا نَفْسُدُوا الْعَالِ بَيْنَكُمْ وَ
بَيْنَهُمْ وَلَا تَعْرُكُوا الْأَحْقَادَ السَّادَةَ وَلَا تُشِيرُوا الْعِدَاةَ *

- (b) Write in Persian a commentary on :— 10

إِنَّا مُتَعَدِّلُونَ فَتَعَا مَبِينًا لِيُغْفَرَ لِي اللَّهُ مَا تَقَدَّمَ مِنْ ذَنْبِي وَمَا تَأَخَّرَ

- (c) Translate into Arabic :— 30

What is to be done? I did not know, sir, that the lady was your daughter. How will you prove that? One of you must perish. Tell me which do you consider the most useful, the quill or the spade? He is a specimen of the natural and original man.

GROUP B

- Write in Persian an essay on *one* of the following subjects :— 60

- (a) The best ghazal-writer of Persia.
(b) Epic poetry in Persian.
(c) Aḥḥad-ud-dīn Anwari.

SIXTH PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

A. MUSLIM HISTORY

Answer any THREE questions.

30

1. Sketch the rise of the Muslim Power in Southern India.
2. Give an account of the achievements of Sulṭān Maḥmūd Ghaznavī in India and Central Asia.
3. Discuss the causes that led to the downfall of the 'Umayyad Dynasty. What part did Persia play in the struggle between the 'Umayyads and the 'Abbāsids?
4. What do you know of the *Bābī* and *Bahā'ī* movements in Persia? In what manner did these affect the political atmosphere of the country and with what result?

B. HISTORY OF PERSIAN LITERATURE

Answer any THREE questions.

40

1. Give an account of the Pahlavī literature and mention the principal Pahlavī works still extant.
2. Write notes on any four of the following :—(a) Gulshāni-Rāz. (b) Atashkada, (c) Zāhīr-i-Fāryābī, (d) Nāṣir-i-Khusrau, (e) Rauzat-uṣ-Safā, (f) Abu-l-Fazl.
3. Trace briefly the development of Sūfī poetry up to Rāmī.
4. Compare and contrast Firdausī and Nizāmī as maṣnavī writers.

C. RHETORIC AND PROSODY

Attempt any THREE questions.

30

1. Define Rhetoric and give a brief account of its origin and development.
2. Define any five of the following terms :—

تقطیع - اصول - بدائع - فاصلة کبری - ترجیع بند - لف و نشر - مراعات النظیر

3. Scan the following and name the metre :—

(a)

چو شاپور بنشست بر تخت داد * کلاه دل افروز بر سر نهاده

(b)

دوش دیده نه ملائک در میخانه زدند

دل آدم برشتند و به پیمانه زدند

4. Name and explain the figures of speech in the following :—

(a)

بخت سوئے درخت خزان آید * راست چون بت پرست سوئے بهار

(b)

سغن را سراسر است ای خردمند و بی * میاور سغن در میان سغن

PERSIAN—PASS

Examiners— { SIR ABDULLAH SUHRAWARDY, KT., M.A., Ph.D.,
D.LITT., BARRISTER-AT-LAW, M.L.A.
MAULVI SYED MOZAFFARUDDIN AHMED, M.A.
,, M. MAHFUZ-UL HAQ., M.A.

FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. (a) Translate into English :—

12

جهاندار محمود با فر و چود * کز و بخشش و چود شد در وجود
دلیر است و با بخشش و فروداد * زمانه ز فرمان او گشت شاد
خداوند گویا و شمشیر و زنج * خداوند آسانی و تاج و کُنج
جهاندار با فر و نیکی شناس * که از تاج دارد ز یزدان سپاس
خردمند و زبیا و چیره سغن * جوانه بسال و بدانش کهن
همی مشتری بارد از فرای * بنمازیم در سایه پر اری
برزم آسمان را خروشان کند * چو بزم آیدش گوهر افشان کند
چو خشم آورد کوه ریزان شود * سپهر از بر خاک لرزان شود

(b) Give the various meanings of فر. Is the word Arabic or Persian ?

5

(c) Give the signification of جوانه in

2

2. Give in your own Persian an account of :—

12

Either,

رفتن شاهپور بطریق بازارگان بروم و گرفتار شدنش بدست قیصر

Or,

چاره نمودن کنیز کی در بارهٔ رهائی شاهپور و گریختن او از روم با کنیز

3. (a) Translate into English :—

13

صلاح کار کجا و من خراب کجا
 بجهنم تفاوت ره از کجاست تا بکجا
 چه نسبت است برندی صلاح و تقوی را
 سماع و عطف کجا نغمهٔ رباب کجا
 دلم ز صومعه بگرفت و خرقهٔ سالوس
 کجاست دیر مغان و شراب ناب کجا
 شد که یاد خوشش باد روزگار وصال
 خود آن کرشمه کجا رفت و آن عتاب کجا
 ز روی دوست دل دشمنان چه دریابد
 چراغ مرده کجا شمع آفتاب کجا
 چو کحل بینش ما خاک آستان شماست
 کجا رویم نغمه ازین جناب کجا
 بجهنم بسبب زندگان که چاه در راه است
 کجا همی روی ای دل بدین شتاب کجا
 قرار و صبر ز حافظ طمع مدار ای دوست
 قرار چیست صبوری کدام و خراب کجا

(b) Explain the force of کجا followed by کجا in the first three lines. 3

(c) Write a note on دیر مغان 2

4. Translate and explain the allusions in any three of the following :— 12

(a)

ماه کنعانی من مسند مصر آن تو شد
 گاه آنست که پدرد کنی زندان را

(b)

شکوه آصفی و اسپ باد و منطق طیر
بیاد رفت و از رخواجه هیچ طرفه نیست

(c)

چون سامری مباش که ز دید و از خری
موسی بهشت و از پی گوساله میرود

(d)

چون ضیاء الحق حسام الدین عزان
ب ساز گردانید ز اوج آسمان

5. *Either*, Give a short account of the life of Maulāna Rūmī. 15

Or, Write a critical note on the style of the *Shāhnāma*.

6. Explain in simple Persian *either* A *or* B :— 10

A

پیش اهل تن* ادب بر طاهرست * که خدا زیشان نهان و ستر است
پیش اهل دل ادب بر باطنیست * زانکه دلشان بر سرائر فاطنیست
توبه عکسی پیش کوران بهر جاہ * با حضور آئی نشینی پایگاه
پیش ببیایان کنی ترک ادب * نار شهوت را ازان گشتی خطب
چون نداری فطنت و نور هدا * بهر کوران روی را میزن جلا

B

دوشبته چون کشید شه زنگ لشکرا * سلطان روم را ز سر افتاد افسرا
باز سفید روز بپرند از آشیان * زاغ شب سیاه بگسترد شهسپرا
تاریک شد سپهر جو طلعات اندرو * تا زان ستاره چون بسیاهی سکندرا
چو نان شبی دراز که پنداشتی قضا * یکره بریده نافش تا روز معشرا
گردون پر ستاره بران قیر کون هوا * چون بر سر نجاشی اکلیل قیصر

7. (a) Give the various significations of the letter *yi* in Persian with examples. 8

(b) Comment on the construction of any *eight* of the following :— 8

جوبار - شمشیر - دوشبته - سرافراز - دیباچه - نگارستان - خورشید - سیه چرده -

شہوار - پریش منوچہر

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English :—

10

گویند عبد الله بن عمر الخطاب رضى الله عنهما در بیرون رفتن پدرش از بن جهان دریا پرسید که ای پدر ترا کی بینم گفت بدانجهان - گفت زودتر می خواهم - گفت شب اول یا شب دوم یا شب سیوم مرا در خواب بینی - پس دوازده سال بر آمد او را در خواب ندید - پس از دوازده سال او را بغواب دید - گفت ای پدر نگفته بودی که پس از سه شب ترا بینم - گفت مشغول بودم که در سواد بغداد پلے ویران شده بود و گماشتهای تیمار آن نداشته بودند و گوسفندے را دران پل دست بسوراخے فرو شد و بشکست تا اکنون جواب آن می دادم *

2. Either, Write down a critical appreciation of the *Siyasatnāma* of Nizām-ul-mulk, laying stress on the style of the author as a writer of Persian prose.

10

Or, Write historical notes on :—

صاحب برید - الپ ارسلان - ایبار

3. Translate into English :—

15

بسمارک تشکیل هیئت متشکته المان را که باوجود مجاورین مقتدر و قوی هیچ کدام از ضعف خود قادر حفظ وجود و استقلال نه بودند - در طبق قانون خلقت حفظ وجود مقتضی دید - با عزم قوی اقدام نمود و موفق شد مولتکه بر حسب قانون رفع معذورات و تسطیع میاه اسباب وضع یزایبع متفرقه ملی را به چشمه واحد که لشکر منظم بود با مساعی فوق العاده آماده نمود - از جنگ فرانسه فاطم در آمد و در قلعه سیدان ناپلیون را اسید گرفت - پس عزم آنها در همه جا و هر حرکت مطابق قانون خلقت یا تقدیر بود *

4. Give the gist of the following lines in your own Persian :—

20

ناموریکه اگر آفتاب عالمتاب وجود مسعودش مشرق آراے سپهر هستی نمی شد ضابطه و استعکام در ارکان دستگاه آفرینش بهم نمی رسید - و اگر سرادق جاه و جلال نبوتش در ساعت سروری و تفوق نمی افراخت کارخانه قواعد امر و نهی صورت انتظام نمی یافت -

طالبان طریق کعبه حق طلبی را بیدستاریز صداقتش در صدر سربر و رعنانه مکانا علیا
راه تقرب نه نمایند و ابواب گلشن رحمت و مغفرت را بی کلید شفاعت بر چهره هیچ کس
نکشایند *

5. Answer *any three* of the following :—

15

(a) Re-write the overlined words in the extract in Question 5 with vowel points, and give their meanings.

(b) Comment on the construction of عالمات and give other examples of this construction.

(c) Clear the allusions, if any, in the Quranic verse quoted in the extract in Question 4.

(d) Give the singular or plural, as the case may be, of the following words :—

صیغه - مثال - حجت - علت - عزیمت - ذرع - شعاع - اهل - لوح - عنوان

6. Re-write the following lines in simple Persian, avoiding the metaphors and similes :—

12

یکتا به همتائیس که ذات عظیم المثال بی زوالش در عالم وحدانیت نظیر ندارد
و سالک عقل حقیقت بین جز بجاده تصدیق فردانیتش قدم نگذارد - و یگانه ایست که
تمثال مثالش در آئینه امکان صورت وقوع نه نماید و خاتم مضمون صدق مقرر وحده
لا شریف له جز بانگشت احدیتش موافق نیاید *

7. (a) Scan the following lines :—

8

(۱)

هر بنده که خدمت شایسته می کند
از عرصه زمانه برد گوی اقتدار

(۲)

اے خداوند کریم واحد ربی همتا
که مراد دل هر خسته ز لطف تو رواست

(b) Define and illustrate the following terms :—

10

مصراع - بیت - شعر - حشو - صدر

THIRD PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate into English :—

30

A

از مناظر بالاخانه تا مسافت زیادی از اطراف و جوانب را میدیدیم - از سمت مشرق خط سفید معبری که از دهلی به میرتپه میرفت از میان اشجار سبزی که اطراف عمارت ماعرس شده بود مشاهده میشد و از سمت مغرب یک قسمت از پلی که بر روی رودخانه چمناس با برج و حصار قلعه سلیم غوری که بالای یکی از برج آن دیرک بیرق انگلیس نصب شده بود و قباب قصور و عمارت سلاطین گورکانیه و عمارت های مساجد دهلی نمایان بود - از سمت شمال و جنوب دهات آباد دهلی و نیستان غیر متناهی پدیدار بود *

B

انسان مرکب است از روح و بدن و هر یک از این دو جزء را المی و لذتی و مرضی و صحتی میباشد - آلام بدن عبارت است از امراض متنوعه که عارض بدن میگردد و آنرا از درک لذات جسمانی باز میدارد و غفلت در معالجه بهلاکت منجر میگردد - آلام روح عبارت است از اخلاق ذمیمه و صفات ذلیل که موجب اضمحلال روح میگردد و باز میدارد آنرا از ادراک لذات روحانیه و رسیدن بسعادات ابدیه -

صحت روح با صحت بدن مقایسه نتوان کرد چه صحت بدن متعلق است به زندگانی پنج روزه دنیا و زیست درین عاریت سرا ولی صحت روح بسته است به تهذیب اخلاق ذمیمه و اجتناب از معاصی و معصیات *

2. Translate into English :—

20

A

بهشت روی تو رونق شکسته میخورا
فرب چشم تو منسوخ کرده جادورا
گر زلف تو تازی بسوی تاتار است
که مشکی ناب کند خوں ناف آهوا

صبا ز نافه چدن مبدوزد باین نکست
 و یا تو شانه کنی زلف عنبرین بورا
 صنم پرست همه زاهدان شهر شوند
 اگر تو بت بزمائی بدین صفت رورا
 بغمزه از پی قتلیم یکی اشار کن
 چه حاجت است کنی رنجه دست و بازورا

B

ای مهر تو جان آفریدش * نعت تو زبان آفریدش
 لطف تو چون طراز امکان * خشم تو خزان آفریدش
 جودت همه بخش عالم کون * علمت همه دان آفریدش
 عراج تو در هوای لاهوت * حد طببران آفریدش
 با علم تو آشنا نیفتاد * بی مسئله دان آفریدش

3. Translate into Persian:—

50

The termination of the Afghan War had been characterized by a practical manifestation of the policy repeatedly dictated to the Governor Generals of India by the Home Directory, to refrain from all further augmentation of the vast possessions of British India. The conquests in Sindh, however, which so speedily followed those in Afghanistan, originated under totally different circumstances, and showed how little reliance can be placed on theories of policy, however well grounded they may appear to be. The following is the opinion, expressed at the time, of this new acquisition, though longer experience has tended greatly to modify the first ideas of its value:—'It is a country without the possession of which our boundary of the Indus cannot be compact. Neither can the navigation of that river be considered safe while an independent, and now hostile, power keeps possession of either bank of the Delta. It is productive, and under our management may be made more productive, and the troops, required to keep possession of it, will cost us nothing; the country itself will maintain them with ease. It lies within a week's reach of our western capital. Its high roads do not run through impassable defiles like the Bolan and the Khaibar and the Khurd Kabul; they consist of magnificent stream, which our steam flotilla may traverse with speed and safety. It lies open to the sea, and troops, ammunition, and supplies may be poured in with ease. It is a plain and may be defended with little difficulty, for there will soon be no enemy more formidable than the heat.'

LATIN—PASS

Paper-setters— { MR. C. E. LOMAX.
REV. FATHER V. VERBOCKHAVEN, S.J.
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MR. W. C. WORDSWORTH, M.A.

FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Answer the TWO questions marked with an asterisk () and any TWO others.*

1. Translate:—

25

Saepe ego, cum flavis messorum induceret arvis
agricola, et fragili iam stringeret hordea culmo,
omnia ventorum concurrere proelia vidi,
quae gravidam late segetem ab radicibus imis
sublimem expulsam eruerent; ita turbine nigro
ferret hiems culmumque levem stipulasque volantis.
saepe etiam immensum caelo venit agmen aquarum
et foedam glomerant tempestatem imbribus atris
collectae ex alto nubes; ruit arduus aether,
et pluvia ingenti sata laeta boumque labores
diluit; implentur fossae, et cava flumina crescunt
cum sonitu, fervetque fretis spirantibus aequor.
ipse Pater media nimborum in nocte corusca
fulmina molitur dextra; quo maxima motu
terra tremit; fugere ferae, et mortalia corda
per gentis humilis stravit pavor.

Show how, in this description, Virgil endows Nature with human feelings and human ways of acting. 10

2. Translate.—

20

Non aliam ob culpam Baccho caper omnibus aris
caeditur et veteres ineunt proscaenia ludi,
praemiaque ingeniis pagos et compita circum
Thesidae posuere, atque inter pocula laeti
mollibus in pratis unctos saluere per utres.
nec non Ausonii, Troia gens missa, coloni
versibus incompitis ludunt risuque soluto,
oraeque corticibus sumunt horrenda cavatis,
et te, Bacche, vocant per carmina laeta, tibi
oscilla ex alta suspendunt mollia pinu.
hinc omnis largo pubescit vinea fetu,
complentur vallesque cavae saltusque profundi,
et quocumque deus circum caput egit honestum.
ergo rite suum Baccho dicemus honorem
carminibus patriis lancesque et liba feremus,
et ductus cornu stabit sacer hircus ad aram,
pinguique in veribus torrebimus exta columnis.

(a) What religious rites or customs are here alluded to by the words: '*oscilla mollia suspendunt*', '*ductus cornu stabit ad aram*'? 15

(b) Prove by several words of this passage that in the mind of Virgil the Italian festivities were not borrowed from Greece.

3. Translate:—

20

Ipse dies agitat festos, fususque per herbam
ignis ubi in medio et socii cratera coronant,
te libans, Lenaee, vocat, pecorisque magistris
velocis iaculi certamina ponit in ulmo,
corporaque agresti nudant praedura palestra.
hanc olim veteres vitam coluere Sabini,
hanc Remus et frater, sic fortis Etruria crevit
scilicet et rerum facta est pulcherrima Roma,
septemque una sibi muro circumdedit arces.
ante etiam sceptrum Dictaei regis, et ante
impia quam caesis gens est epulata iuvenis,
aureus hanc vitam in terris Saturnus agebat:
necdum etiam audierant inflari classica, necdum
impositos duris crepitare incudibus enses.
sed nos immensum spatii confecimus aequor,
et iam tempus equum fumantia solvere colla.

(a) Scan the line:—

15

'Necdum etiam audierant inflari classica, necdum.'

(b) What metaphor do you find in the last line?

(c) Show from these lines that Virgil wants to praise the past.

*4. Show that the *Georgics* are the glorification of relentless peasant labour. 10

*5. UNSEEN TRANSLATION 20

The Frog and the Ox.

Inops, potentem dum vult imitari, perit.
in prato quodam rana conspexit bovem,
et tacta invidia tantae magnitudinis,
rugosam inflavit pellem: tum natos suos
interrogavit, an bove esset latior.
illi negaverunt, rursus intendit cutem
maiore nisu, et simili quaesivit modo,
quis maior esset. illi dixerunt bovem.
novissime indignata, dum vult validius
inflare sese, rupto iacuit corpore.

— — —

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate:—

8

(a) Vigilas tu de nocte, ut tuis consultoribus respondeas, ille, ut eo, quo intendit, mature cum exercitu perveniat; te gallorum, illum bucinarum cantus exsuscitat; tu actionem instituis, ille aciem instruit; tu caves, ne tui consultores, ille, ne urbes aut castra capiantur; ille tenet [et scit], ut hostium copiae, tu, ut aquae pluviae arceantur; ille exercitatus est in propagandis finibus, tu in regendis. Ac nimirum (dicendum est enim, quod sentio) rei militaris virtus praestat ceteris omnibus. Haec nomen populo Romano, haec huic urbi aeternam gloriam peperit, haec orbem terrarum parere huic imperio coegit; omnes urbanae res, omnia haec nostra praeclara studia et haec forensis laus et industria latent in tutela ac praesidio bellicae virtutis. Simul atque increpuit suspicio tumultus, artes ilico nostrae conticescunt.

(b) Quamquam huiusce rei potestas omnis in vobis sita est, iudices; totam rem publicam vos in hac causa tenetis, vos gubernatis. Si L. Catilina cum suo consilio nequiorum hominum, quos secum eduxit, hac de re posset iudicare, condemnaret L. Murenam, si interficere posset, occideret. Petunt enim rationes illius, ut orbetur auxilio res publica, ut minuatur contra suum tutorem imperatorum copia, ut maior facultas tribunis plebis detur depulso adversario seditionis ac discordiae concitandae. Idemne igitur delecti ex amplissimis ordinibus honestissimi atque sapientissimi viri iudicabunt, quod ille importunissimus gladiator hostis rei publicae iudicaret? Mihi credite, iudices, in hac causa non solum de L. Murenæ, verum etiam de vestra salute sententiam feretis. In discrimen extremum venimus; nihil est iam, unde nos reficiamus aut ubi lapsi resistamus.

2. Translate and comment on any *three* of the following:— 10

(a) Saltatorem appellat L. Murenam Cato.

(b) Quo quidem in bello virtus enituit egregia M. Catonis, proavi tui.

(c) Legem ambitus flagitasti, quae tibi non de erat; erat enim severissime scripta Calpurnia.

(d) Mulieres omnes propter infirmitatem consilii maiores in tutorum potestate esse voluerunt: hi invenerunt genera tutorum, quae potestate mulierum continerentur.

(e) Tum enim dixit duo corpora esse rei publicae, unum debile infirmo capite, alterum firmum sine capite; huic, si ita de se meritum esset, caput se vivo non defuturum.

3. Narrate briefly the course of events that called Cicero to the defence of L. Murena. 10

4. Write brief notes on *six* only of the following:—*Servius Sulpicius, bellum Mithridaticum, Iuno Sospita, quaestura, coloma, candidatus consularis, equester ordo, stilus, stipendia.* 6

5. Translate:—

8

(a) Fabius quoque movit castra, transgressusque saltum super Allias loco alto ac munito consedit. Tum per Samnium Romam se petere simulans Hannibal usque in Pelignos populabundus rediit; Fabius medius inter hostium agmen urbemque Romanam iugis ducebat, nec

absistens nec congregiēns. Ex Pelignis Poenus flexit iter, retroque Apuliam repetens Gereonium pervenit, urbem metu, quia collapsa ruinis pars moenium erat, ab suis desertam; dictator in Larinate agro castra communiit. Inde sacrorum causa Romam revocatus, non imperio modo, sed consilio etiam ac prope precibus agens cum magistro equitum, ut plus consilio quam fortunae confidat et se potius ducem quam Sempronium Flaminiūque imitetur: ne nihil actum censeret extracta prope aestate per ludificationem hostis; medicos quoque plus interdum quiete quam movendo atque agendo proficere; haud parvam rem esse ab toties victore hoste vinci desisse et ab continuis cladibus respirasse,—haec nequicquam praemonito magistro equitum Roman est profectus.

(b) Si aut collegam, id quod mallet, tui similem, L. Aemili, haberes aut tu collegae tui esses similis, supervacanea esset oratio mea; nam et duo boni consules, etiam me indicente, omnia e re publica fideque vestra faceretis et mali nec mea verba auribus vestris nec consilia animis acciperetis. Nunc et collegam tuum et te talem virum intuenti mihi tecum omnis oratio est, quem video nequicquam et virum bonum et civem fore, si, altera parte claudente re publica, malis consiliis idem ac bonis iuris et potestatis erit. Erras enim, L. Paule, si tibi minus certaminis cum C. Terentio quam cum Hannibale futurum censes; nescio an infestior hic adversarius quam ille hostis maneat te. Cum illo in acie tantum, cum hoc omnibus locis ac temporibus certaturus es; adversus Hannibalem legionesque eius tuis equitibus ac peditibus pugnandum tibi est, Varro dux tuis militibus te est oppugnaturus.

6. Comment on any *three* of the following:— 10

(a) 'Immo Arretti ante moenia sedeamus', inquit, 'hic enim patria et penates sunt.'

(b) Quae Punica religione servata fides ab Hannibale est, atque in vincula omnes coniccti.

(c) Aufidus amnis, utrisque castris affluens, aditum aquatoriū ex sua cuiusque opportunitate haud sine certamine dabat.

(d) Haec est pugna Cannensis, Aliensi cladi nobilitate par.

(e) Prius, inquam, P. Sempronio per civium agmen quam per hostium fuit crumpendum.

7. What are the outstanding merits of Livy's style, and his merits and shortcomings as a historian? 10

8. Write brief notes on *eight* only of the following:—*denunti capite, vectigales ac stipendiarii, ver sacrum, magister equitum, consul suffectus, antiquo abrogoque, P. Cornelius Scipio, homo novus, Campus Martius, libertinus.* 8

9. Translate:— 30

Cicero attacks Catiline

Etenim quid est, Catilina, quod iam amplius expectes, si neque nox tenebris obscurare coeptus nefarios nec privata domus parietibus continere voces coniurationis tuae potest, si illustrantur, si crumpunt omnia? Muta iam istam mentem, mihi crede, obliviscere caedis atque incendiorum. Teneris undique; luce sunt clariora nobis tua consilia omnia; quae iam mecum licet recognoscas. Meministine me ante diem XII Kalendas Novembris dicere in senatu fore in armis certo die, qui dies futurus esset ante diem VI Kal. Novembris, C. Manlium, audaciae satellitem atque administrum tuae? Num me fefellerit, Catilina, non modo res tanta, tam atrox tamque incredibilis, verum, id quod multo magis est admirandum, dies? Dixi ego idem in senatu caedem te optumatum contulisse in ante diem V Kalendas Novembris, tum cum multi principes civitatis Roma non tam sui conservandi quam tuorum consiliorum reprimendorum causa profugerunt. Num infitiri potes te illo ipso die meis

praesidiis, mea diligentia circumclusum commovere te contra rem publicam non potuisse, cum tu discessu ceterorum nostra tamen, qui remansissemus, caede te contentum esse dicebas?

THIRD PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

A. PROSE COMPOSITION

1. Translate into Latin:—

12

(a) There are some who say that the envoys ought not to have been sent, since they fear that they will not return safe home.

(b) We found out that, so far from being true, it was not even credible.

(c) Come at 4 p.m. on the 10th of March if you can. If you cannot, let me know.

(d) He said that he would not have stayed so many months at Rome if that letter had come.

2. (a) Turn into *oratio obliqua* depending on a verb in a historic tense:—

8

Quoniam fortuna vos in nostram detulit potestatem, si, id quod facere debetis, rem publicam cum optimo quoque defendetis, certum est vobis vitam et pecuniam donare. Quapropter, quid sentiatis, proloquimini.

(b) Turn into *oratio recta*:—

Se magis consuetudine sua quam merito eorum civitatem conservaturum, si prius quam murum aries attigisset se dedidissent; sed deditionis nullam esse condicionem nisi armis traditis.

3. Translate into Latin:—

30

On receiving this news, Alexander halted and gave his men repose for four days, so that they should go into action fresh and vigorous. He also fortified his camp, and deposited in it all his military stores and all his sick and disabled soldiers, intending to advance upon the enemy with the serviceable part of his army perfectly unencumbered. After this halt he moved forward, while it was yet dark, with the intention of reaching the enemy and attacking them at break of day. About half-way between the camps there were some undulations of the ground, which concealed the two armies from each other's view. But, on Alexander's arriving at their summit, he saw by the early light the Persian host arrayed before him. Some of the officers were for attacking instantly at all hazards, but the more prudent opinion of Parmenio prevailed, and it was determined not to advance further till the battle-ground had been carefully surveyed.

B. GRAMMAR

4. What are the chief uses of the genitive in Latin? Give examples.

...

5

5. Distinguish between *aut . . . aut* ; *vel . . . vel* ; *utrum . . . an* ; *sive . . . sive*, and give illustrative examples which should be translated. 5

6. Give and translate examples of the different forms of conditional sentences in Latin. 5

7. Give—the dative singular and genitive plural of *canis* and *unus*, the ablative singular and accusative plural of *animal* and *aliquis* ; the other degrees of comparison of *anxius*, *constantius*, and *egenus* ; and the principal parts of *verto*, *metior*, and *fido*. 5

C. ROMAN HISTORY

Answer any THREE of the following questions.

8. What were the causes of the First Punic War? 10
9. How would you account for the success of Hannibal in the early stages of the Second Punic War and his eventual failure? 10
10. What were the legislative proposals of Tiberius Gracchus? How far was there anything unconstitutional in the methods he employed? 10
11. Sketch briefly the course of the Jugurthine War and estimate its importance in Roman history. 10
12. Give a concise account of Caesar's campaigns against the Gauls. 10
13. Sketch briefly the course of events from Caesar's crossing of the Rubicon to the battle of Munda. 10
14. What powers did Augustus possess as Princeps? What truth was there in his claim to have 'restored the Republic'? 10

FRENCH—PASS

Paper-setters— { DR. PROBODICHANDRA BAGCHI, M.A., D.LIT.
REV. FATHER E. POPULAIRE, S.J.
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FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate any *two* of the following extracts into English:— 40
- (a) C'est peu de dire *aimer*, Elvire, je l'adore ;
Ma passion s'oppose à mon ressentiment ;
Dedans mon ennemi je trouve mon amant,
Et je sens qu'en dépit de toute ma colère
Rodrigue dans mon cœur combat encor mon père:

Il l'attaque, il le presse, il cède, il se défend,
 Tantôt fort, tantôt faible, et tantôt triomphant
 Mais en ce dur combat de colère et de flamme,
 Il déchire mon cœur sans partager mon âme,
 Et, quoi que mon amour ait sur moi de pouvoir,
 Je ne consulte point pour suivre mon devoir ;
 Je cours sans balancer où mon honneur m'oblige.

- (b) Jamais nous ne goûtons de parfaite allégresse :
 Nos plus heureux succès sont mêlés de tristesse ;
 Toujours quelques soucis en ces événements
 Troublent la pureté de nos contentements.
 Au milieu du bonheur mon âme *en* sent l'atteinte ;
 Je nage dans la joie, et je tremble de crainte.
 J'ai vu mort l'ennemi qui m'avait outragé ;
 Et je ne saurais voir la main qui m'a vengé.
 En vain je m'y travaille, et d'un soin inutile,
 Tout cassé que je suis, je cours toute la ville :
 Ce peu que mes vieux ans m'ont laissé de vigueur
 Se consume sans fruit à chercher ce vainqueur.

- (c) Ne vous offensez *point*, Sire, si devant vous
 Un respect amoureux me jette à ses genoux.
 Je ne viens point ici demander ma conquête ;
 Je viens tout de nouveau vous apporter ma tête,
 Madame ; mon amour n'*emploiera* point pour moi
 Ni la loi du combat, ni le vouloir du roi.
 Si tout ce qui s'est fait est trop peu pour un père,
 Dites par quels moyens il vous faut satisfaire.
 Faut-il combattre encor mille et mille rivaux,
 Aux deux bouts de la terre étendre mes travaux,
 Forcer moi seul un camp, mettre en fuite une armée,
 Des héros fabuleux passer la renommée ?
 Si mon crime par là se peut enfin laver,
 J'ose tout entreprendre, et puis tout achever.

2. *Either*, Bring out the idea expressed in the *first four* lines of
 (b) in Question 1, and explain it with reference to the context. 10
Or, Delineate the character of Don Diègue as painted by Corneille.
 3. Discuss how much of the plot of *Le Cid* was derived by Corneille
 from earlier sources. 10
 4. Write grammatical notes on the words italicized in the passages
 quoted in Question 1. 10

5. Translate any *two* of the following extracts into English :— 30

- (a) Qu'importe? un anonyme . . .
 Las de vivre en un temps qui n'a rien de sublime,
 Et de fumer sa pipe en parlant d'idéal.
 Ce que je suis? Je ne sais pas. Voilà mon mal.
 Suis-je? Je voudrais être,—et ce n'est pas commode.
 Je lis Victor Hugo. Je récite son *Ode*
A la Colonne. Je vous conte tout cela
 Parce que tout cela, mon Dieu, c'est toute la
 Jeunesse! Je m'ennuie avec extravagance ;
 Et je suis, Monseigneur, artiste et jeune France.

- (b) O France! mourras-tu? Non. Car, si tu mourais,
 Le mal vivrait, l'effroi vivrait; cette fenêtre,
 L'aube, se fermerait; on verrait la mort naître.
 L'immense mort de tout. France, l'extinction
 De Ninive, de Tyr, d'Athènes, de Sion,
 Rome oubliant son nom, Thèbes, perdant sa forme,
 Ne seraient rien auprès de ton éclipse énorme.
 Le passé monstrueux se dresserait debout.
 Ce cadavre crierait:—J'existe. Eteignez tout.
 Plus de flambeaux. Vivez, spectres. La France est morte!
- (c) Sa mère en le mettant au monde s'en alla.
 Sombre distraction du sort. Pourquoi cela?
 Pourquoi tuer la mère en laissant l'enfant vivre?
 Pourquoi par la marâtre, ô deuil! la faire suivre?
 Car le père était jeune, il se remaria.
 Un an, c'est bien petit pour être paria;
 Et le bel enfant rose avait eu tort de naître.
 Alors un vieux bonhomme accepta ce pauvre être;
 C'était l'aïeul. L'aïeul prit dans les bras l'enfant
 Et devint sa mère. Chose étrange et naturelle.

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Translate *three* of the following extracts:—

24

(a) Nos sens n'aperçoivent rien d'extrême. Trop de bruit nous assourdit; trop de lumière éblouit; trop de distance et trop de proximité empêche la vue; trop de longueur et trop de brièveté de discours l'obscurcit; trop de vérité nous étonne: j'en sais qui ne peuvent comprendre que qui de zéro ôte 4 reste zéro. Les premiers principes ont trop d'évidence pour nous. Trop de plaisir nous incommode. Trop de consonances déplaisent dans la musique; et trop de bienfaits irritent. Nous ne sentons ni l'extrême chaud, ni l'extrême froid. Les qualités excessives nous sont ennemies, et non pas sensibles: nous ne les sentons plus, nous les souffrons.

(b) La coutume de voir les rois accompagnés de gardes, de tambours, d'officiers, et de toutes les choses qui plient la machine vers le respect et la terreur, fait que leur visage, quand il est quelquefois seul et sans ces accompagnements, imprime dans leurs sujets le respect et la terreur, parce qu'on ne sépare pas dans la pensée leur personne d'avec leur suite, qu'on y voit d'ordinaire jointe. Et le monde, qui ne sait pas que cet effet a son origine dans cette coutume, croit qu'il vient d'une force naturelle; et de là ces mots: Le caractère de la Divinité est empreint sur son visage, etc. La puissance des rois est fondée sur la raison et sur la folie du peuple, et bien plus sur la folie.

(c) Il y a une autre hyprocrisie qui n'est pas si innocente, parce qu'elle impose à tout le monde: c'est l'affliction* de certaines personnes qui aspirent à la gloire d'une belle et immortelle douleur. Après que le temps qui consume tout a fait cesser celle qu'ils avaient en effet, elles ne laissent pas d'opiniâtrer leurs pleurs, leurs plaintes et leurs soupirs; elles prennent un personnage lugubre, et travaillent à persuader, par toutes leurs actions, que leur déplaisir ne finira qu'avec la vie. Cette triste et fatigante vanité se trouve d'ordinaire dans les femmes ambitieuses. Comme leur sexe leur ferme tous les chemins qui mènent à la gloire, elles s'efforcent de se rendre célèbres par la montre d'une incon-solable affliction.

(d) Pour rendre la société commode, il faut que chacun conserve sa liberté. Il ne faut point se voir, ou se voir sans sujétion, et pour se divertir ensemble. Il faut pouvoir se séparer sans que cette séparation apporte de changement. Il faut se pouvoir passer les uns des autres, si on ne veut pas s'exposer à embarrasser quelquefois; et on doit se souvenir qu'on incommode souvent, quand on croit ne pouvoir jamais incommoder. Il faut contribuer, autant qu'on le peut, au divertissement des personnes avec qui on veut vivre; mais il ne faut pas être toujours chargé du soin d'y contribuer. La complaisance est nécessaire dans la société, mais elle doit avoir des bornes; elle devient une servitude quand elle est excessive.

2. (a) What was Pascal's aim in writing the *Pensées*? Is there a well defined plan? What are the leading ideas? 15

(b) Comment on the following maxims: — 16

'Voulez-vous qu'on croie du bien de vous? N'en dites pas.'

'Il faut de plus grandes vertus pour soutenir la bonne fortune que la mauvaise.'

3. Supply the proper prepositions after the following verbs or adjectives: *On apporta* — *manger*; *il essaya* — *se défendre*; *il aime* — *se promener*; *on permit* — *les vendre*; *il fut forcé* — *avouer*; *on se mit* — *jouer*; *demandez* — *quelqu'un*; *se plaindre* — *quelqu'un*; *curieux* — *voir*; *prêt* — *partir*; *per* — *ses ancêtres*; *tendre* — *tout le monde*; *sensible* — *froid*; *indispensable* — *ses amis*; *triste* — *avoir commis cette faute* 15

1. Translate into English:—

30

(a) *Bonaparte.*

On dit qu'aux derniers jours de sa longue agonie,
Devant l'éternité seul avec son génie,
Son regard vers le ciel parut se soulever;
Le signe rédempteur toucha son front farouche;
Et même on entendit commencer sur sa bouche
Un nom . . . qu'il n'osait achever.
Achève . . . c'est le Dieu qui règne et qui couronne;
C'est le Dieu qui punit, c'est le Dieu qui pardonne:
Pour les héros et nous il a des poids divers;
Parle-lui sans effroi: lui seul peut te comprendre.
L'esclave et le tyran ont tous un compte à rendre:
L'un du sceptre, l'autre des fers.
Son cercueil est fermé: Dieu l'a jugé. Silence!
Son crime et ses exploits pèsent dans la balance:
Que des faibles mortels la main n'y touche plus!
Qui peut sonder, Seigneur, ta clémence infinie?
Et vous, fléaux de Dieu, qui sait si le génie
N'est pas une de vos vertus?

(b) Tantôt nous marchions dans des routes bordées de murs de chaque côté, tantôt dans des sentiers tracés à travers des vignes et des vergers, tantôt dans des chemins ombragés par d'énormes châtaigniers dont l'épais feuillage, interceptant l'air et la lumière, ne laissait pousser sous son couvert que des mousses veloutées. A chaque pas, dans ces routes et ces chemins, s'ouvrait une grille en fer ou une barrière en bois et alors on apercevait des allées de jardin bien sablées, serpentant autour de pelouses plantées de massifs d'arbustes et de fleurs, puis, cachée dans la verdure, s'élevait une maison luxueuse ou une élégante maisonnette enguirlandée de plantes grimpantes ; et presque toutes, maisons comme maisonnettes, avaient à travers les massifs d'arbres ou d'arbustes, des points de vue habilement ménagés sur le lac éblouissant et son cadre de sombres montagnes.

THIRD PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Answer the questions marked with an asterisk (), and any THREE others.*

*1. Translate into English any two of the following passages:— 40

(a) *On Swiss Summits.*

Enfin, me voici au lait, le gosier sec, le corps en nage, et fort affairé du vent glacial qui vient me sécher plus vite que je ne voudrais. 'Monsieur, me dit Jean, qui a repris sa bonne humeur et qui parle maintenant français comme un apprenti ébéniste du faubourg Saint-Antoine, nous sommes à deux mille trois mètres au-dessus du niveau de la mer.—Bien obligé, mon enfant ; il fait diablement froid ici.—Ah ! Monsieur, ce n'est rien. L'an passé, un Anglais y prit une fameuse fluxion de poitrine.—Vraiment !—Oui, on a cru qu'il mourrait à Bulle. Voilà le mont Blanc, là-bas.—Merci.—Nous en sommes à cent kilomètres.—Cela me fait grand plaisir.

(b) *Judgement of Strafford.*

La perte de Strafford fut irrévocablement résolue ; son procès commença. La chambre des communes tout entière y voulut assister, pour soutenir l'accusation de sa présence. Avec les communes d'Angleterre siégeaient les commissaires d'Ecosse et d'Irlande, également accusateurs. Quatre-vingts pairs étaient présents comme juges ; les évêques, d'après le vœu violemment exprimé des communes, s'étaient récusés, comme dans tout procès de vie et de mort. Au-dessus des pairs, dans une tribune fermée, prirent place le roi et la reine, avides de tout voir, mais cachant, l'un son angoisse, l'autre sa curiosité. Dans des galeries et sur des gradins plus élevés se pressait une foule de spectateurs, hommes, femmes, presque tous de haut rang, émus d'avance par la pompe du spectacle, la grandeur de la cause et l'attente qu'excitait le caractère connu de l'accusé.

(c) *The Child compared to Dawn.*

La nuit, quand l'homme dort, quand l'esprit rêve, à l'heure
 Où l'on entend gémir comme une voix qui pleure
 L'onde entre les roseaux,
 Si l'aube, tout à coup, là-bas luit comme un phare,
 Sa clarté, dans les champs, éveille une fanfare
 De cloches et d'oiseaux.

Enfant, vous êtes l'aube, et mon âme est la plaine
 Qui des plus douces fleurs embaume son haleine
 Quand vous la respirez.
 Mon âme est la forêt dont les sombres ramures
 S'emplissent pour vous seul de suaves murmures
 Et de rayons dorés.

*2. Translate into French:—

20

In a Prussian village lived an old peasant with his three sons, who were strong youths, but very lazy. One morning, the brothers were sitting in the kitchen. On most days their father was up long before them. Charles, the eldest, looked out of the window and said: 'Where can father be? I do not see him in the field.'—'He is still sleeping, I suppose,' said John.—Fred, the youngest, ran up the stairs, but soon came back, crying: 'He is lying in his bed; he is dead.' They then wept like children, and did not know what to do.

*3. Translate into French:—(a) He came to know my secret. (b) He had just arrived at his office. (c) The king ordered his soldiers to charge. (d) The cook asked the shopkeeper how much he would charge for two chickens: thereupon he ordered them. (e) No sooner had Miss Creighton seen the ghost, than she became mad. (f) Sooner or later, all your worries will tell upon you. (g) I want to tell you a wonderful story.

15

*4. What is the feminine of—*acteur, abbé, prince, empereur, loup, neveu, perroquet, oncle, bouc, canard*?

10

5. Give an example of a reflexive verb (infinitive) belonging to each of the four conjugations. With what auxiliary verb are such verbs conjugated in their compound tenses? Conjugate fully the present perfect (*passé indéfini*) of any one of them.

5

6. Who was Richelieu? Give an idea of his political aims and actions.

5

7. Which king of France is supposed to have said: '*L'État c'est moi*'? Explain the meaning of these words with reference to history.

5

8. What do you mean by the *Monarchie de Juillet*? How did it begin and end? Who was the king then reigning?

5

LINGUISTICS—PASS

<i>Paper-setters</i> and <i>Examiners—</i>	{	MR. PRAPHULLACHANDRA GHOSH, M.A.	<i>(Paper-setter only)</i>
		DR. MUHAMMAD SHAHID-ULLAH, M.A., D.LIT.	
		„ J. S. TARAPOREWALA, B.A., PH.D.	
		PANDIT VIDHUSEKHAR SASTRI.	

FIRST PAPER

Only FIVE questions are to be answered.

All questions are of equal value.

1. Explain and illustrate *four* of the following:—ablaut, umlaut, reduplication, stop consonants, diphthongs.
2. What do you know of Grimm's Law? How is it supplemented by Verner's Law?
3. Give an account of the various effects of 'Linguistic Contact', and illustrate your remarks with reference to English or Bengali.
4. Show how languages have been morphologically classified. What is the principle underlying this classification?
5. Discuss the influence of spelling on pronunciation, and vice versa.
6. Write a brief essay on analogy as a formative principle with respect to languages.
7. Write a note on the rise of dialects, with illustrative references.
8. What attempts have been made to form a universal international language? Discuss their relative merits.
9. Examine Sweet's remarks on the evolution of the verb.

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

Attempt FIVE questions only, Questions 6 and 7 being compulsory.

The questions are of equal value.

1. Explain and illustrate from Bengali—syllables, breath groups, glides, assimilation—progressive and regressive, and established and accidental.
2. Give a description of the process of origination of speech sounds, and explain the difference between their two main classes, vowels and consonants.
3. 'There is complete explosion of the first element of a plosive group, like *pt*, *pt*, &c., but where the same plosive occurs doubly the first one is unexploded.'
- Discuss and illustrate.
4. Write a note, giving examples, on the significance of doubling of consonants in a Bengali word.

5. Ascertain the value and quantity of the following vowels in the words mentioned against them :—*a* : বত, মতি, মন, মল ; *i* or *ī* : দিন, মিনে, দীন, দীত্ব ; *u* or *ū* : উল, উলু, মুর, মুর, রূপ রূপ।

6. Show, as clearly as you can, the different values of *e* (এ) in Bengali, and state whether it is ever colloquially used for Sanskrit *a*. Give examples and find out the cause for its being so.

7. (a) What are intonation, stress, and degrees of stress? Give examples.

(b) Write a short note on the standard Bengali, giving examples.

8. Ascertain the value or values of *o* in Bengali in the following words, comparing it with that in Sanskrit. Supposing that the value of Sanskrit *o* is ১, how would you approximately evaluate the Bengali *o*?—

রোগ, রোগী, বোন, রোজ, সরোজ, সোজা।

9. Discuss the main rules enunciated by Rabindra Nāth for determining the *a* (= *a* in *cat*) sound of *e* (এ) in Bengali words.

10. Criticize : 'Though ব (v) has lost its position in the Bengali alphabet its উ-অ sound is retained in many words of *v* origin : গুণ from গুবাক, দেবর from দেবর, দুয়ার from দ্বার, &c'.

THIRD PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Answer Question 1 and any FIVE of the remainder.

1. What are the various language families represented in India? Indicate briefly the localities where each is to be found, and name *three* languages from each family. 20

2. What services have been rendered to Indian Linguistics by Sir George A. Grierson? What is your estimate of his work? 16

3. Write what you know about *either* Santali *or* the Non-Aryan Himalayan languages. 16

4. What are the chief grammatical points in which the Dravidian languages differ from the Indo-Aryan? 16

5. What do you know about the Gipsies and their language? 16

6. How far have the various divisions of the Secondary Prakrits persisted in the Aryan languages of India to-day? 16

7. Indicate the importance of Persian for the scientific study of modern Indo-Aryan languages. Which of these latter have been the most deeply influenced by Persian, and why? 16

8. Compare the grammar and structure of Bengali with *either* Maithili *or* Gujarati. 16

9. Discuss the influence of Sanskrit on the literary history of your own vernacular. 16

HISTORY

*Paper-setters—
(Pass and
Honours)*

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HISTORY—HONOURS

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MR. BIPINBHARI GUPTA, M.A.
,, K. ZACHARIAH, M.A.

FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

Attempt FIVE questions only. At least ONE must be attempted from EACH of the groups.

The questions are of equal value.

GROUP A

1. With the aid of the accompanying sketch-map—

Either, Explain the aims of Peter the Great in the Baltic Sea, and describe the success he achieved.

Or, Describe the dominions of Charles V in Europe.

Or, Give an account of Europe in 1715—after the treaties of Utrecht and Rastadt.

2. 'Francis I was the originator of the traditional French policy afterwards so successfully pursued by Richelieu of being Protestant abroad and Catholic at home.' Develop.

3. Give a critical estimate of the historic services rendered by Calvinism.

4. 'The political and religious motives for the Thirty Years' War were at first combined, but they did not co-operate throughout and their divergence in the end proved fatal to the highest hopes of both.' Illustrate.

5. Why is Philip II's reign usually counted as a great failure?

GROUP B

6. Describe the circumstances which led to the substitution of Russia for Sweden as the leading power in the Baltic and in the North of Europe in the eighteenth century.

7. 'I have made Philosophy the legislator of my Empire, and her logical principles shall transform Austria.' How far did Joseph II succeed in realizing his ideal?

8. 'Consolidation, centralization, and expansion express the results of the long reigns of Frederick William I and Frederick the Great of Prussia.' Expand.

9. What are the salient points in the foreign policy of Kaunitz? What benefits, if any, did Austria derive from it?

10. Give a brief account of the scientific and intellectual developments in the eighteenth century.

GROUP C

11. What were the results of the American war of independence on Europe?

12. 'The French Revolution has often been compared to the English Revolution in the seventeenth century.' Herder has compared the French Revolution to the Reformation and the rise of Christianity.' Discuss.

13. Give an account of the Peninsular War of 1808—1814. Assess the importance of the parts played by Wellesley, Soult, and Masséna therein.

14. 'Mirabeau did not invent the Revolution, he was its manifestation.' 'Robespierre was and must ever remain—shadowy and undefined.' Do you agree?

Give your own view of the parts played by them in the French Revolution.

15. 'Louis XVI must die because the country must live' (ROBESPIERRE). 'The death of Louis XVI is a most revolting act of cruelty and injustice' (CHARLES JAMES FOX). Account for this diversity of views.

16. How far is it true to say that it is an irony of history that Napoleon I should prepare the way for Bismarck?

GROUP D

17. 'To the liberals of the nineteenth century, the Holy Alliance became the embodiment of a diabolical conspiracy to stamp out democracy, nationalism, and social justice.' Why? How did the Holy Alliance founder?

18. 'The worst of chambers, said Cavour, is better than the most brilliant of ante-chambers.' Do you agree? Does this estimate of parliamentary government as opposed to autocracy apply to France between 1789 and 1875?

19. How far was the Treaty of Berlin a compromise, pregnant with future troubles?

20. How far did the Triple Alliance of 1883 benefit the parties thereto?

21. Comment on any *two* of the following:—

(a) 'Among the Princes of our time, Ferdinand of Aragon, the present king of Spain, may almost be accounted a new prince. . . . And if you consider his achievements, you will find them all great and some extraordinary.' (MACHIAVELLI: the *Prince*.)

(b) 'I had no inordinate ambition to rule a multitude of kingdoms, but merely desired to secure the welfare and prosperity of Germany, my dear fatherland, and of my other kingdoms, especially of my Belgian provinces, and to encourage and extend, as far as in me lay, Christian peace and harmony throughout the world.' (CHARLES V's address on his abdication at Brussels, 1555.)

(c) 'How many times have I refused to agree (to a partition of Poland). But disaster after disaster heaped upon us by the Turks; misery, famine, and pestilence at home; no hope of assistance from England or France and the prospect of being isolated and threatened with a war both with Russia and Prussia—it was all these considerations that finally forced me to accede to that unhappy proposal which will remain a blot on my whole reign.' (MARIA THERESA's letter, 1772.)

(d) 'England stands pledged to uphold the territorial arrangements established at the Congress of Vienna. The invasion of a weaker state by a stronger one, for the purpose of conquest, would demand our immediate interference. But with the internal affairs of each separate state, we have nothing to do.' (CASTLEREAGH on the conference at Laybach.)

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

Answer any FIVE questions.

The questions are of equal value.

1. Account for George III's failure to restore royal authority after the Whig debacle.

2. 'The influence of the crown has increased, is increasing, and ought to be diminished.' Expand.

3. Comment on or criticize: 'Irish history from 1782 to 1801 is the history of England's first failure to know her appointed hour.'

4. 'If ever there was a National party it was Pitt's in 1784.' Do you agree?

5. Indicate the part played by the younger Pitt in the history of English colonial expansion.

6. Were the demands of the 'armed neutrality' sanctioned by the international naval practice of those times?

7. Critically examine the respective attitude of Burke and Fox towards the French Revolution.

8. What part did Castlereagh play in the resettlement of Europe? Do you approve of his foreign policy?

9. Give a brief account of the humanitarian movement in England during the reign of the third George.

10. Write a short essay on the Industrial Revolution and its effect on British politics.

THIRD PAPER

Candidates are required to give their answers in their own words as far as practicable.

SIX questions to be attempted. From each section at least ONE question should be answered.

The questions are of equal value.

GROUP A

1. Describe the social conditions in Ancient India as reflected in the epic poems.
2. Give a detailed account of the municipal organization of the Mauryas. How does the account of Megasthenes in this respect compare with that of the *Arthasāstra*?
3. 'Whatever exertions I make are for the end that I may discharge my debt to animate beings.' Did Asoka live up to this ideal?
4. Give a summary review of the 'golden age' of the Guptas with special reference to their patronage of art and literature.
5. Write short notes on any *two* of the following :—(a) the Gurjara Empire of Bhoja, (b) Dharmapāla, (c) Rājā Bhoja of Dhār, (d) Vikramānka, (e) Rājendra Cholaadeva I.

GROUP B

6. 'So far as India was concerned Mahmūd of Ghaznī was simply a bandit operating on a large scale' (V. SMITH). How far is this remark justified?
7. Give a brief account of the reign of Sultan Firoz of the House of Tughlaq, with special reference to (a) his internal administration, (b) his policy towards Hindus.
8. Tell the story of the independent Sultanate of Bengal under Husain Shah and Nusrat Shah.
9. Write a study of Jahāngīr as a man and as a ruler.
10. Shivaji is regarded by some as the last great constructive genius and nation-builder that the Hindu race has produced. Do you agree? Give reasons for your answer.

GROUP C

11. 'The revolution of 1756-7 was not primarily or solely the conquest of an Indian province by a European trading settlement. It was rather the overthrow of a foreign government by the trading and financial classes.' How far is this estimate of the events that led up to Plassey correct?
12. To what extent was Lord Hastings successful in consolidating British dominion in Central India and the Deccan?
13. Narrate briefly the story of the rise and fall of the Sikh Monarchy.

14. Write short notes on any *three* of the following:—

- (a) 'Masterly inactivity.'
- (b) The Ilbert Bill controversy.
- (c) Lord Cross's Indian Councils Act of 1892.
- (d) The foreign policy of Lord Curzon.
- (e) The Montagu-Chelmsford Report.

15. Sketch briefly the history of the spread of Western education in India, and estimate its results.

FOURTH PAPER

Candidates are required to give their answers in their own words as far as practicable.

Attempt Question 2, and any FOUR of the rest.

1. Draw an outline-map of—

Either, (a) the Eastern Mediterranean to illustrate the extent of the Athenian Empire at its height ;

Or, (b) the Thracian regions to illustrate fully the policy and achievements of Brasidas ;

Or, (c) Syracuse and its neighbourhood to illustrate in detail the story of the Sicilian Expedition.

2. Write a short essay on *one* of the following subjects:—

(a) The dramatic works of Euripides and Aristophanes, specially as reflecting the political, social, and religious atmosphere and problems of their times.

(b) The social and industrial life of Athens in the fifth century B. C.

(c) Thucydides as a historian.

(d) Was Athens an individualistic or a socialistic State?

3. Explain fully the economic factors that helped to bring about the formation and the downfall of the Athenian Empire.

4. Discuss the importance of the geographical factor in shaping the different stages and the main incidents of the Peloponnesian Wars.

5. 'In order to understand the policy of Sparta, it must be borne in mind that there were two rival parties at Sparta whose influence upon her political action can be traced throughout.' In a short summary of the Spartan policy and action during the Peloponnesian Wars, show how far the above statement is true.

6. 'If by democracy we mean government by the people, as well as for the people, we can but recognize in the Constitution, which was the creation of Pericles' intellect, a democracy the most complete that the world has ever known. Yet it was that Constitution which in the long run proved the undoing of Athens.' Discuss the above statement in a detailed survey of the Athenian Constitution as developed by Pericles.

7. 'Without being insensible either to the faults or to the misdeeds of Imperial Athens, I believe that her empire was a great comparative benefit, and its extinction a great loss.' Criticize the above statement of Grote, and give your own opinion on the same, with arguments and references to particular facts in the history of the empire.

8. 'Few statesmen of the merit of Cleon have come before posterity for judgment at such a great disadvantage, condemned by Thucydides, held up to eternal ridicule by Aristophanes.' Discuss the above statement in a short summary of the career of Cleon, and give your own estimate of his character and policy.

9. Was the Sicilian project of Athens inherently an impossible one? If you had been in command what steps would you have taken to ensure its success, and what mistakes of the actual leaders would you have tried to avoid?

10. 'The government of the Five Thousand, Thucydides thought and Aristotle agreed with him, was the best Athens had ever had.' Discuss. What were its defects, if any, and why did it fail?

FIFTH PAPER

Candidates are required to give their answers in their own words as far as practicable.

Candidates are permitted to answer FIVE questions.

All questions are of equal value.

1. 'Spain was for Carthage an inexhaustible treasure store for empire.' Discuss this statement with reference to the First Punic War.

2. Describe the Roman subjugation of the Iberian peoples, and summarize the characteristic results of the Roman domination over them.

3. How did the Second Punic War affect the Roman Constitution?

4. Write short notes on *four* of the following:—Arsinoë (II), Ager Gallicus, Aclinus Paetus, Manius Valerius, Agis, Apanea, Hierax—the Hawk, Stoicism, Fabius Cunctator, *Delenda est Carthago*, *Lex Hieronica*.

5. Describe fully the social conditions prevailing in Italy in the various classes of society during the second century.

6. Examine the causes which led to the wars of Rome against Illyria, and indicate the factors which contributed mainly to the success of Rome in the first campaign.

7. Show how the conquest of Greece influenced the intellectual life of Rome.

8. Discuss the alliance between Philip of Macedon and Antiochus of Syria. What far-reaching results did the alliance have?

9. Compare Hannibal and Scipio with reference to their military skill, and describe the methods of warfare used in the battle of Zama.

10. Analyse the causes of Hannibal's failure in the Second Punic War.

SIXTH PAPER

Candidates are required to give their answers in their own words as far as practicable.

FIVE questions only to be attempted.

Dates should be given where possible.

The questions are of equal value.

1. Give an account of the internal administration of Justinian, with special reference to his legislative work.
 2. 'The Empire was based on the support of the Church.' Examine and criticize this statement, illustrating your answer from the history of the Hohenstaufen dynasty.
 3. Explain briefly the issues at stake between the Crown and the Church in England during the twelfth, thirteenth, and early fourteenth centuries.
 4. Give an account of the administrative development and territorial expansion of France under Philip Augustus.
 5. Describe the main features of education during the Middle Ages.
 6. 'The history of the Papacy during the fourteenth and fifteenth centuries is the prologue to the Reformation.' Elucidate this criticism.
 7. Describe the reign of the Emperor Charles IV, sketching his political aims, and indicating how far his policy was successful.
 8. Give an account of the origin, extent, and achievements of the Hanseatic League.
 9. Write *short notes* on:—(a) the Khalifate of Cordoba, (b) the Cistercian Order, (c) the maritime achievements of Portugal.
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HISTORY—PASS.

Examiners	{	MR. INDUBHUSHAN BANERJEE, M.A.
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		.. DEBENDRANATH SEN, M.A.
		.. BIJAYCHANDRA SENGUPTA, M.A.
		.. JATINDRANATH SIKDAR, M.A.
		.. NIMAITCHAND SIL, M.A.

FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

Answer SIX questions only, THREE to be taken from each group.

The questions are of equal value.

GROUP A

1. Give a short account of the geographical discoveries in the fifteenth century. What were their effects on the commercial and political development of Western Europe?
2. Examine the causes of the greatness and decay of Spain.
3. What led to the revolt of the Netherlands? Explain its character and result.
4. Give an account of the reign of Henry IV of France. How did he succeed in pacifying the country?
5. Describe the causes and results of the War of Austrian Succession. What were the motives of the different contending parties thereto?
6. 'Peter the Great was the first to attempt to bridge over the yawning gulf between Russia and Western Europe, and to make his empire into a modern civilized state.' Expand.

GROUP B

7. Enumerate the causes, political, social, and economic, which led to the outbreak of the French Revolution.
8. Write a short history of the reign of Catherine II of Russia. How far did she carry out the policy of Peter the Great?
9. Describe the 'Reign of Terror' in France during the French Revolution. Indicate the part played in it by Robespierre.

10. How was Prussia regenerated after the humiliating disaster of Jena?
 11. Briefly narrate the history of the Peninsular War. How do you account for the reverses suffered by the French arms in Spain?
 12. Narrate the story of the unification of Germany.
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SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

Attempt only six questions.

The questions are of equal value.

1. 'It was a glorious peace for Great Britain ; it marks a signal epoch in her imperial history. But it was not so advantageous as she had a right to expect.' Explain the above remarks with reference to the Treaty of Paris (1763).
 2. Discuss the case of John Wilkes and explain fully its constitutional significance.
 3. Trace in broad outline the course of events leading to the independence of the United States of America. How far was George III personally responsible for it?
 4. Estimate the importance of Pitt's administration during the nine years of peace which succeeded the election of 1784.
 5. Trace the history of the Whig Party in England during the reign of George III.
 6. What were the effects of the French Revolution upon the internal history of England?
 7. Write a critical note on the 'Industrial Revolution'.
 8. Describe the part played by England in the Napoleonic War. Illustrate your answer by a sketch-map as far as possible.
 9. Discuss the effects of the Napoleonic War upon the history of England during 1815—1820.
 10. 'If the effort of George III failed to restore the power of the crown, it broke the power which impeded the advance of the people itself to political supremacy.' Discuss.
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THIRD PAPER

Candidates are required to give their answers in their own words as far as practicable.

Attempt SIX questions only of which at least ONE and not more than TWO must be from each group.

The questions are of equal value.

GROUP A

1. 'How then, in the face of such bewildering diversity, can a history of India be written? . . . The answer to the query is found in the fact that India offers unity in diversity.' Explain.
2. Attempt a critical estimate of Aśoka's place in history.
3. 'The Gupta period is in the annals of classical India almost what the Periclean age is in the history of Greece.' Discuss.
4. What was the political condition of Northern India during the ninth and tenth centuries A.D.?

GROUP B

5. Briefly describe the five sultanates into which the Bahmani kingdom was divided, showing what policy they adopted towards the non-Muslim powers.
6. Describe Akbar as a man, conqueror, and ruler.
7. Sketch in broad outline the political history of the Mahrattas during the fifty years following the death of Aurangzeb.

GROUP C

8. Describe the changes introduced by Parliament into the Company's system of government in India, and its relations with the home government from 1772 to 1858.
 9. Why was the Permanent Settlement effected in Bengal? What are its advantages and disadvantages?
 10. 'The Morley-Minto constitution turned out to be after all only a half-way house. The Montague-Chelmsford Report of July 1918 condemned it as inadequate.' Discuss.
 11. Write notes on any two of the following:—
 - (a) Tipu Sultan.
 - (b) Treaty of Bassein.
 - (c) The unveiling of Lhasa.
 - (d) The Durand line.
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ECONOMICS

<i>Paper-setters— (Pass and Honours)</i>	{	MR. DEBENDRANATH BANERJEE, M.A.
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ECONOMICS—HONOURS

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FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

Answer any FIVE questions.

The questions are of equal value.

1. Indicate the leading factors making for an increase in the size of the business unit, and account for the survival of the smaller firms.
2. Discuss the practical and theoretical importance of the concepts of (a) elasticity of demand, and (b) elasticity of supply. What factors govern the elasticity of demand for a commodity?
3. Examine the various complications which are introduced into the theory of value when it comes to be applied to articles whose production follows the law of increasing returns.
4. 'Whenever a very large fixed capital is used not for a single purpose, but for varied purposes, the influence of the principle of Joint Cost shows' (TAUSSIG). Examine this statement and indicate the element of joint cost in railway expenses.
5. Show how far the marginal productivity theory can be accepted as a complete statement of the forces determining (a) wages, and (b) profits.
6. Discuss the effects of agricultural improvements upon rent, distinguishing between such improvements as are equally applicable to all lands and those that are applicable only to some lands.
7. Discuss the causes favouring the formation of Trusts and other industrial combinations. Do you think that Trusts and combinations can be justifiably regarded as *permanent* forms of industrial organization?

8. Indicate the nature of the gain from international trade, and show how it can be measured. Examine the manner in which such gain is shared by the trading countries.

9. 'No close correspondence, nor even a rough correspondence, can be made out between the cost of the precious metals and their value.' Elucidate this statement.

10. Examine the manner in which changes in the bank-rate influence the purchasing power of money.

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

Answer only SIX questions.

1. Expound the classical theory of sovereignty. Is the theory compatible with modern international relations?

2. Indicate the main defects of the present National Government of Great Britain. What are its effects on the Cabinet?

3. Give a precise exposition of Rousseau's conception of General will. Is unanimity sufficient to secure it?

4. What is the exact nature of public opinion? How is it created? Write a short critical note on the paradox that public opinion is neither public nor opinion.

5. Give your conception of—(a) a nation state, (b) a world state.

Assess critically the value of a group of nation states and a world state.

6. Examine critically the views of the following two classes of writers on democracy:—

(a) Those who are uncompromising enemies of democracy and condemn it as a hopeless failure.

(b) Those who recognize its defects and dangers, and consider that they are not only curable, but prefer it to any other form of government.

7. Describe the nature and characteristics of the system of government called bureaucracy. What are its merits and defects?

'In England bureaucracy thrives under the cloak of ministerial responsibility.' Explain.

8. Examine (a) whether the United States constitution adopts a complete separation of powers; (b) how far such a separation would be possible in general; and (c) what results would follow such a separation.

9. 'India must remain above party politics.' Explain the importance and significance of this maxim. Describe how she has come gradually into the arena of party politics, and with what results.

10. What are the constitutional and administrative powers of the French President? Discuss his relations with the Prime Minister and the legislature.

THIRD PAPER

Answer FIVE questions only.

The questions are of equal value.

1. In what way has the recent export of gold from India affected India's trade and revenue and the rupee-sterling exchange?

2. Describe briefly India's taxation system, distinguishing between central and provincial sources of revenue.

3. What is meant by discriminating protection? To what extent are India's industries now protected?

4. Discuss the importance to Bengal of the jute crop and the jute mills, and examine the reasons for the present reduced world demand for jute.

5. Give a brief account of the Permanent Settlement of Bengal, indicating to what extent it has departed from first intentions.

6. What are the chief defects of Indian labour, and what, in your opinion, are the remedies for them?

7. On what does the prosperity of Calcutta as a port depend? Give some particulars of its growth.

8. The problem of the day, it is often said, is not production but distribution. Man has mastered production, but not distribution.

Comment on this assertion in relation to the internal economy of Bengal.

9. Explain clearly India's currency system. How is new money put into circulation when wanted?

10. Write concise notes on any *four* of the following:—(a) the Bombay Small Holdings Bill 1927, (b) the Whitley Commission, (c) the exemption of agricultural incomes from income-tax, (d) Mr. F. L. Brayne's work at Gurgaon, (e) the proposed Reserve Bank for India, (f) India's mineral resources.

FOURTH PAPER

Candidates are required to give their answers in their own words as far as practicable.

Answer any FIVE questions.

The questions are of equal value.

1. Discuss briefly the manner in which the Bank of England exercises control over the English money market.

2. Explain carefully the part which the bills of exchange play in an organized money market.

3. Do you consider it advisable that ordinary joint-stock banks should finance the long term credit requirements of industry? Discuss the difference between the English and the Continental practices in this respect.

4. 'The rate of exchange between two currencies cannot be stable unless both the currencies are linked to gold.' Examine this statement, fully bringing out its implications.

5. If the average price of a country's exports fall relatively to that of her imports, to what causes may this be due? Is it necessarily a disadvantage to the country?

6. 'Unless hedged about with many qualifications and assumptions, the taxable capacity of a community is a phrase which has very little meaning' (DALTON). Examine this statement carefully.

7. Discuss briefly the effects of public expenditure on production.

8. Explain the processes involved in the payment of inter-governmental debts. What are the economic effects of such payments?

9. When do you think the State is justified in owning and managing an industry or business? Do you consider the proposed Reserve Bank for this country an appropriate enterprise for State ownership and management?

FIFTH PAPER

Candidates are required to give their answers in their own words as far as practicable.

Five questions only to be attempted.

The questions are of equal value.

1. Examine, first with reference to the context, and secondly with reference to the content, the following passage from the *Politics* :—

'Let us remember that we should not disregard the experience of ages ; in the multitude of years, these things, if they were good, would certainly not have been unknown, for almost everything has been found out, although they are sometimes not put together ; in other cases men do not use the knowledge they have. Great light would be thrown on this subject if we could see such a form of government in the actual process of construction, for the legislator could not form a state at all without distributing and dividing the citizens into associations for common meals, and into phratries and tribes.'

2. Give, and in the light of modern political conditions appraise, Aristotle's views on the Rule of the Middle Class.

3. 'All states have three elements', says Aristotle, 'and the good lawgiver has to regard what is expedient for each state.' What are these 'elements', and how do Aristotle's views in respect to them compare with those of modern Political Science?

4. Examine Aristotle's views on the ideal state with reference to the following items :—(a) population, (b) site, and (c) character of the citizens.

5. Comment on the following :—'As regards its general range of inquiry, the *Politics* may be said to be neither a systematic work in political philosophy, nor a text-book on the art of government.'

6. Examine J. S. Mill's arguments in favour of the view that the ideally best form of government is representative government.

7. Give J. S. Mill's views on indirect election. How far are they applicable to modern conditions in India?

8. Examine J. S. Mill's views on the extension of the suffrage.

9. Comment on the remark that *Representative Government* 'reflects strikingly Mill's curious political position, combining, as it does, an enthusiastic belief in democratic government with most pessimistic apprehensions as to what the democracy was likely to do.'

SIXTH PAPER

Candidates are required to give their answers in their own words as far as practicable.

Write an essay on any one of the following subjects:—

- (a) The growth of manufacturing industries in India.
- (b) The mineral resources of India.
- (c) The regulation of wages under the present industrial system.
- (d) The unemployment problem in Bengal.

ECONOMICS—PASS

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		„ BIJAYKUMAR SARKAR, A.B.
		„ SATISCHANDRA SEN, M.A.
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FIRST PAPER

General Economics

Candidates are required to give their answers in their own words as far as practicable.

Answer any SIX questions.

The questions are of equal value.

1. 'Economics is a study of men in the ordinary business of life.' Discuss this definition of economics and indicate the practical utility of the subject.

2. State the law of demand. Consider the effects of increased demand upon the price of (a) wheat, and (b) cotton goods.
 3. How would you define the term 'capital'? Discuss if (a) the goodwill of a business, (b) patent right, (c) money in circulation, (d) the skill of a musician, are capital.
 4. 'The problem of population is not one of mere size but of efficient production and equitable distribution.' Discuss.
 5. Discuss the principle that regulates the value of joint products. What would be the effect of an increased demand for gas upon the price of coke?
 6. State the conditions under which a factor of production can permanently raise its remuneration.
 7. 'High wages and high prices do not necessarily go together.' Comment on this statement and bring out clearly the relation between wages and cost of production.
 8. In what different ways can gold and silver be joined in the currency system of a country?
 9. What is an economic crisis? To what causes can the present economic crisis be attributed?
 10. Explain why the imports of a country must in the long run pay for its exports.
-

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

Answer any SIX questions.

The questions are of equal value.

1. 'As an explanation of the origin of the State the theory of the social contract is now entirely discredited.' Do you agree with this view? Give reasons for your answers.
2. What is meant by a non-Sovereign law-making body? What are its characteristics? Illustrate your answer.
3. What should be in your opinion the proper functions of a modern state?
4. In what respects does the unitary form of government differ from the federal form of government? Illustrate your answer.
5. What should be the proper relation between the representative and his constituency in a democratic state? Should he be bound by the instructions of his constituents?
6. Describe the position and powers of the Crown in the British political system.
7. Discuss the effects of the Parliament Act of 1911 on the position and powers of the British House of Commons.
8. State what appear to you to be the outstanding features of the American Constitution.

9. Examine the nature of control that a Governor's Legislative Council can exercise over the expenditure of provincial revenues in India.

10. Describe the constitution, nature, and functions of the Executive Council of the Governor-General of India.

THIRD PAPER

Candidates are required to give their answers in their own words as far as practicable.

Answer any six questions.

The questions are of equal value.

1. 'The problem of Indian agricultural development is mainly a problem of water supply.' Critically examine this statement and show what other factors are necessary for its development.

2. Discuss the arguments *for* and *against* the Permanent Settlement of land revenue in Bengal.

3. Examine the progress made by the Co-operative Movement in India. Discuss the part played by the State in this matter.

4. Examine the position of jute in the foreign trade of India. Estimate the importance of this commodity to the province of Bengal.

5. Discuss the possibility of developing cottage industries in Bengal. Would such an attempt, in your opinion, be successful? Give reasons for your answer.

6. Discuss the arguments *for* and *against* the introduction of gold currency in India.

7. What should be, in your opinion, the suitable constitution for the 'Reserve Bank' in India? What functions should it ordinarily discharge?

8. Compare the advantages and disadvantages of direct taxation with those of indirect taxation in India.

9. Carefully examine the nature of the public debt in India, and discuss how far it is economically sound or unsound.

10. How far, do you think, is the policy of the discriminating protection adopted by the Government of India justified? Discuss the economic effects of such a policy.

PHILOSOPHY

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FIRST PAPER

Psychology

Candidates are required to give their answers in their own words as far as practicable.

Answer any FIVE questions.

The questions are of equal value.

1. Give your own estimate of the attempts to establish Psychology as a science independent of philosophic speculations. 'Introspection is retrospection.' Explain and discuss.
2. Give a critical estimate of—(a) Faculty-Psychology; (b) Phrenology, Old and New.
3. Write short notes on:—(a) unconscious mentation, (b) sub-consciousness, (c) threshold of consciousness, (d) focus of consciousness.
4. Explain the law which connects the intensity of sensation with the intensity of stimulus. Within what limits does the law hold good?
5. Distinguish between—(a) after-image, (b) free memory-image, (c) dream-image.
6. How would you account for—
(a) negative (colour) after-images;
(b) single vision with two eyes and two retinal images;
(c) seeing things double?
7. Explain the different stages in the formation of a concept.
8. Analyse the emotion of fear and state the physical expressions with which it is usually associated. How would you account for the expression of fear being approximately the same amongst the different races of men?
3. Explain and illustrate—(a) random action, (b) instinct, (c) habit.

SECOND PAPER

Ethics

Candidates are required to give their answers in their own words as far as practicable.

Answer any FIVE questions.

The questions are of equal value.

1. State and examine the metaphysical postulates of ethics.
 2. Explain the relation of desire to pleasure.
'Pleasure is the constant and exclusive object of desire.' Examine this statement.
 3. Explain and examine Butler's theory of conscience. Are the deliverances of conscience always and necessarily infallible? Discuss this.
 4. Explain and examine Mill's introduction of a qualitative distinction among pleasures.
 5. Exhibit how Eudæmonism offers a reconciliation of the extreme doctrines of Hedonism and Rigorism.
 6. Explain the different theories of punishment. Which of them do you prefer, and on what grounds?
 7. How would you explain the relation of ethics to politics?
Is ethics exclusively concerned with conduct or with character as well? Discuss.
 8. Explain and criticize Kant's theory of the categorical imperative.
 9. Write ethical notes on *any two* of the following:—
(a) Happiness is not the reward of virtue, but is virtue itself.
(b) Die to live.
(c) Be a person and respect others as persons.
(d) You *ought*, therefore you *can*.
-

THIRD PAPER

Candidates are required to give their answers in their own words as far as practicable.

Answer any FIVE questions.

The questions are of equal value.

1. What do you understand by philosophy? How is it related to life? Do you subscribe to the view that philosophy is idle speculation?
2. Explain and examine the following statements:—
(a) All knowledge comes from sensations.
(b) All knowledge is the interpretation of sensations.
3. Explain the concept of causality. What is its objective nature? Is there one ultimate cause or a plurality of causes?

4. How does an organism differ from a machine? Can the origin of life be mechanically explained?
 5. What are the nature and characteristics of the mind? How is it related to the body?
 6. What is meant by reality as distinguished from appearance? What are the implications of the idea of the world as a system of reals?
 7. What do you understand by immortality? What are your reasons for accepting or rejecting the belief in immortality?
 8. What is your idea of God, and how do you explain God's relation to the world? Is the world necessary for God?
-

FOURTH PAPER

Natural Theology

Candidates are required to give their answers in their own words as far as practicable.

Answer any FIVE questions.

The questions are of equal value.

1. Assign the place of the following in the Philosophy of Religion:—
 - (a) Natural theology.
 - (b) Psychology of religious consciousness.
 - (c) Comparative study of actual religions.
 2. 'What is common to all religions is a feeling rather than an intellectual belief.' Discuss this statement. How far is a creed important for religious life?
 3. 'God as an unconditioned Being cannot be logically proved.' Examine this statement in reference to Kant's criticism of the three traditional proofs of God.
 4. Present the moral proof of God after Martineau. Is the existence of God *inferable* from the moral consciousness or is it only a *postulate* implied by the moral consciousness?
 5. Critically examine the conception of God as an infinite free cause limited only by space, time, and primordial matter.
 6. 'The creation of free spirits is God's self-limitation in power and knowledge.' Discuss this statement.
 7. 'The Infinite Spirit contains in itself the necessity of self-revelation to and in the finite.' Explain and examine this statement.
 8. Discuss the a priori justification of the view that this world is the best of all possible worlds.
 9. How far is the belief in a life after death necessary to religion? Is there any evidence pointing to the ante-natal existence of spirits?
-

FIFTH PAPER

History of Philosophy

Candidates are required to give their answers in their own words as far as practicable.

Answer any FIVE questions.

The questions are of equal value.

1. *Cogito ergo sum*. Explain and offer critical comments.
2. Give a critical account of Spinoza's theory of substance.
3. Give a comparative estimate of the theories of space held by Locke, Leibniz, and Kant.
4. What does Locke mean by an idea? Can there be abstract ideas?
5. What exactly is the part played by the Divine spirit in Berkeley's system?
6. Give a critical estimate of Hume's theory of causation.
7. What is Kant's view of metaphysics? How is the *Critique of Pure Reason* relevant to it?
8. What place does Kant assign to imagination in our knowledge of objects?
9. How is Kant's approach to the problem of knowledge different from that of Locke?
10. Give a critical estimate of Berkeley's theory of the perception of space.

SIXTH PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Answer Question 7 and any two of the remaining questions.

1. *Either*, In what sense does Berkeley affirm and in what sense does he deny the possibility of general notions? 25
Or, 'How can we know any proposition to be true of all particular triangles, except we have first seen it demonstrated of the abstract idea of a triangle which equally agrees to all?' How does Berkeley solve this problem from his point of view?
2. How does Berkeley show that even if there were material objects without the mind, it would be impossible for us to know this? 25
3. 'Surely there is nothing easier than for me to imagine trees, for instance, in a park or books existing in a closet, and nobody by to perceive them.' What reply does Berkeley give to this objection to his theory that the *esse* of a thing is its *percipi*? 25
4. Explain and examine Berkeley's doctrine that the things which we perceive are visibly inactive. 25
5. How does Berkeley account for the universal belief of men that things exist independently of mind? 25

6. What advantages in Berkeley's view arise from his demonstration that unperceived matter does not exist? 25

7. Write an essay on any *one* of the following subjects:— 50

- (a) Philosophy and psychology.
 - (b) Duty and discipline.
 - (c) Mechanism, evolution, and teleology.
 - (d) Is idealism a tenable theory?
 - (e) The religious consciousness.
 - (f) Spinoza's doctrine of the grades of knowledge.
-

PHILOSOPHY—PASS

MR. KANAILAL BANERJEE, M.A.
 „ HEMANTAKUMAR BASU, M.A.
 „ UMESCHANDRA BHATTACHARYYA, M.A.
 „ HUMAYUN KABIR, M.A.
 „ KUMUDRANDHU CHAKRABARTI, M.A.
 „ CHARUSASI CHATTERJEE, M.A.
 „ PHANIBHUSAN CHATTERJEE, M.A.
 „ SATISCHANDRA CHATTERJEE, M.A.
 SRIMATI TATINI DAS, M.A.
 MR. SURESCHANDRA DATTA, M.A.
 „ DHINRENDRANATH GHOSHAL, M.A.
 „ KALIDAS SEN, M.A.

Examiners—

FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

Answer FIVE questions only.

The questions are of equal value.

1. What objections have been urged against introspection as a method of psychology?
 2. Indicate the stages through which the mind passes before the sensation of a sound gives rise to the perception of a bell.
 3. Describe how solidity is perceived by vision.
 4. Indicate the nature of attention, and illustrate its different forms. Show the relation of attention to interest.
 5. Distinguish memory from productive imagination and expectation. State and illustrate the different forms of productive imagination.
 6. Analyse the nature of belief.
 7. Distinguish briefly, with suitable illustrations, sense feeling, emotion, and sentiment.
 8. Give a psychological analysis of a *concrete* voluntary action.
 9. Distinguish consciousness from self-consciousness on the one hand and the subconscious on the other.
- Give some illustrations of the operation of the subconscious in our everyday life.
-

SECOND PAPER

Ethics

Candidates are required to give their answers in their own words as far as practicable.

Answer any FIVE questions.

The questions are of equal value.

1. Examine fully the view that Ethics 'though a normative science is not to be regarded as a practical science'.
 2. Attempt a classification of the ethical methods, indicating what you consider to be the true method of Ethics.
 3. Explain and illustrate the different forms of non-moral action, and trace the growth of a voluntary action through its varying stages.
 4. Show that 'the moral judgement is not properly passed upon a *thing done*, but upon a *person doing*'. Determine precisely in this connexion the nature and object of moral judgement.
 5. Explain the relation of Ethics to Metaphysics.
 6. Discuss the merits and demerits of Hedonism as a standard of moral life. On what grounds would you distinguish between Hedonism and Eudæmonism as types of ethical theory?
 7. Trace the development of Utilitarianism as an ethical theory, with special reference to its different presentations by Bentham and Mill.
 8. Explain and examine Kant's formulation of the categorical imperative.
 9. Expound carefully the relation between duties and virtues. Is there such a thing as a 'conflict of duties'?
-

THIRD PAPER

Candidates are required to give their answers in their own words as far as practicable.

Only FIVE questions to be attempted.

The questions are of equal value.

1. 'Philosophy is simply the sum total of all scientific knowledge.' Explain this definition. Is not philosophy fundamentally distinct from the positive sciences?
2. Explain clearly the meaning of the terms dogmatism and criticism as methods of philosophical thought.
3. Compare Hume's theory of causality with Kant's.

4. Explain the different theories of the relation between mind and body.

5. Explain the principle of evolution in nature. What is meant by teleological evolution?

6. Examine the following statements:—(a) Truth consists in copying reality. (b) Philosophy is the vision of the world's unity.

7. Explain the relation of God to man. How does the pantheistic conception of God affect our idea of this relation?

8. Are space and time objective facts or merely abstractions of the mind?

9. Analyse the concept of the absolute. Can the absolute be known?

B. A. & B.Sc. Examinations

1934

MATHEMATICS—HONOURS

<i>Paper-setters—</i>	{	DR. HARIDAS BAGCHI, M.A., Ph.D. MR. HARIPRASANNA BANERJEE, M.Sc. „ SATISCHANDRA GHOSH, M.A. PROF. GANESH PRASAD, M.A., D.Sc. „ NIKHILRANJAN SEN, D.Sc., Ph.D. DR. NRIPENDRANATH SEN, D.Sc.
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FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

SIX questions to be attempted, THREE from each group.

The questions are of equal value.

GROUP A

1. (i) Prove that

$$(1+x)^m = 1 + {}^m C_1 x + {}^m C_2 x^2 + \dots + {}^m C_n x^n + \dots,$$

where m is any commensurable negative quantity for all values of x , such that $-1 < x < +1$.

(ii) If $q_n = \frac{1.3.5.7 \dots (2n-1)}{2.4.6.8 \dots 2n}$, find

$$\{q_{2n} - q_1 q_{2n-1} + q_2 q_{2n-2} - \dots + (-1)^{n-1} q_n - \{q_n + 1\}$$

in terms of q_n and q_{2n} .

2. (i) Prove that the arithmetic mean of n positive quantities is not less than their geometric mean.

(ii) If $a_1 > a_2 > \dots > a_n$, and all are positive, deduce from above that $(a_1 - a_n)^{n-1} > (n-1)^{n-1} (a_1 - a_2)(a_2 - a_3) \dots (a_{n-1} - a_n)$.

3. (i) Prove that the series $\sum u_n$ is convergent if $p > 1$, where u_n stands for $\frac{1}{n(\log n)^p}$

(ii) Consider the nature of the series

$$1 + \frac{m}{1} + \frac{m(m-1)}{1.2} + \dots + \frac{m(m-1)\dots(m-n+1)}{1.2\dots n} + \dots, \text{ where } m \text{ is negative.}$$

4. (i) If $\frac{p_n}{q_n}$ be the n th convergent to the simple continued fraction

$$a_1 + \frac{1}{a_2 + \frac{1}{a_3 + \frac{1}{a_4 + \dots + \frac{1}{a_n + \dots}}}}$$

where a_1, a_2, \dots are all positive, prove that

$$p_n = a_n p_{n-1} + p_{n-2};$$

and obtain the formula for $\frac{p_n}{p_{n-1}}$.

(ii) In the particular case of

$$a_1 + \frac{1}{a_2 + \frac{1}{a_1 + \frac{1}{a_2 + \dots}}}$$

find the relation between p_{2n} and q_{2n+1} .

5. (i) Find the sum of n terms of the series

$$\frac{1}{3} + \frac{3}{3.7} + \frac{5}{3.7.11} + \frac{7}{3.7.11.15} + \dots,$$

and also the limiting value when n is infinitely increased.

(ii) If the series

$$1 + \frac{x^3}{3} + \frac{x^6}{6} + \dots, \quad x + \frac{x^4}{4} + \frac{x^7}{7} + \dots, \quad \frac{x^2}{2} + \frac{x^5}{5} + \frac{x^8}{8} + \dots,$$

are denoted by a, b, c respectively, show that

$$a^3 + b^3 + c^3 - 3abc = 1.$$

6. (i) Develop the following determinant in products of the leading constituents :

$$\begin{vmatrix} A & b_1 & c_1 & d_1 \\ a_2 & B & c_2 & d_2 \\ a_3 & b_3 & C & d_3 \\ a_4 & b_4 & c_4 & D \end{vmatrix}$$

(ii) Find the linear factors of

$$\begin{vmatrix} \beta^2 \gamma^2 + \alpha^2 \delta^2 & \beta \gamma + \alpha \delta & 1 \\ \gamma^2 \alpha^2 + \beta^2 \delta^2 & \gamma \alpha + \beta \delta & 1 \\ \alpha^2 \beta^2 + \gamma^2 \delta^2 & \alpha \beta + \gamma \delta & 1 \end{vmatrix}$$

GROUP B

7. (i) Enunciate and prove Descartes's rule of signs in respect of positive roots of a rational and integral algebraical equation.

(ii) Form an equation with rational coefficients which shall have for roots all the values of the expression

$$\theta_1 \sqrt{p} + \theta_2 \sqrt{q} + \theta_3 \sqrt{r},$$

where $\theta_1^2 = 1$, $\theta_2^2 = 1$, $\theta_3^2 = 1$.

8. (i) Prove that if a relation of the form $\beta = \phi(\alpha)$ exist between two of the roots of an equation, the equation may be depressed two dimensions,

(ii) Find the condition that the equation

$$x^3 + px^2 + qx + r = 0$$

should have two roots connected by the relation

$$\alpha\beta + 1 = 0$$

9. (i) Find the reducing quadratic of the cubic

$$ax^3 + 3bx^2 + 3cx + d,$$

(ii) Show that

$$a^3 \phi(x) = \left(\frac{G + a\Delta^{\frac{1}{2}}}{2\Delta^{\frac{1}{2}}} \right) \left(ax + \frac{G - a\Delta^{\frac{1}{2}}}{2H} \right)^3 - \left(\frac{G - a\Delta^{\frac{1}{2}}}{2\Delta^{\frac{1}{2}}} \right) \left(ax + b + \frac{G + a\Delta^{\frac{1}{2}}}{2H} \right)^3$$

$\phi(x)$ standing for the cubic, and H , G , Δ having their usual significance.

10. (i) Show how to find a superior limit of the positive roots of an equation with numerical coefficients.

(ii) Find the equation which has for roots the six values of the function $p = \alpha\alpha' + \beta\beta' + \gamma\gamma'$, where α, β, γ and α', β', γ' are the roots of the equations

$$ax^3 + 3bx^2 + 3cx + d = 0$$

and $a'x^3 + 3b'x^2 + 3c'x + d' = 0$ respectively.

11. Derive Sturm's functions for the equation

$$x^4 - 2x^3 - 3x^2 + 10x - 4 = 0,$$

and find the number and situation of its real roots.

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

Only SIX questions to be attempted, THREE from each group.

The questions are of equal value.

GROUP A

1. Show that two of the lines represented by the equation

$$ax^4 + bx^3y + cx^2y^2 + dxy^3 + ey^4 = 0$$

will (i) be at right angles if

$$(b+d)(ad+be) + (c-a)^2(a+c+e) = 0,$$

(ii) bisect the angle between the other two if

$$a=e, c+6a=0, b+d=0.$$

2. (i) Show that the equation to the circle circumscribing the triangle formed by the lines

$$x+y=6, 2x+y=4, x+2y=5$$

is

$$x^2 + y^2 - 17x - 19y + 50 = 0.$$

(ii) If the origin be at one of the limiting points of a system of coaxial circles of which

$$x^2 + y^2 + 2gx + 2fy + c = 0$$

is a member, prove that the equation of the system of circles cutting them all orthogonally is

$$(x^2 + y^2)(g + \mu + c(x + \mu y)) = 0.$$

3. Find the focus and the equation to the axis of the parabola

$$\sqrt{ax} + \sqrt{by} = 1.$$

If the axis of the parabola passes through a fixed point prove that the locus of the focus will be a rectangular hyperbola.

4. Find the polar equation of the tangent at any point of the conic

$$\frac{l}{r} = 1 - e \cos \theta.$$

Prove that the two conics

$$\frac{l_1}{r} = 1 - e_1 \cos \theta,$$

$$\frac{l_2}{r} = 1 - e_2 \cos (\theta - \alpha)$$

will touch one another if

$$l_1^2 (1 - e_2^2) + l_2^2 (1 - e_1^2) = 2l_1 l_2 (1 - e_1 e_2 \cos \alpha).$$

5. Find the equation to the normal at any point of a hyperbola referred to its asymptotes.

The normals at the four points (x_1, y_1) , (x_2, y_2) , (x_3, y_3) , and (x_4, y_4) of a rectangular hyperbola meet in the point (α, β) ; prove that

$$\alpha = x_1 + x_2 + x_3 + x_4, \quad \beta = y_1 + y_2 + y_3 + y_4,$$

and $x_1 x_2 x_3 x_4 = y_1 y_2 y_3 y_4 = -c^4$.

6. Prove that the points of intersection of the conics

$$ax^2 + 2hxy + by^2 = 1,$$

$$a'x^2 + 2h'xy + b'y^2 = 1$$

are at the ends of conjugate diameters of the first conic, if

$$ab' + a'b - 2hh' = 2(ab - h^2).$$

Show also that the equation to the equi-conjugate diameters of the first conic is

$$\frac{ax^2 + 2hxy + by^2}{ab - h^2} = 2 \frac{(x^2 + y^2)}{a + b}.$$

GROUP B

7. (i) If $\alpha + \beta + \gamma = \pi$, and

$$\tan \frac{1}{4}(\beta + \gamma - \alpha) \tan \frac{1}{4}(\gamma + \alpha - \beta) \tan \frac{1}{4}(\alpha + \beta - \gamma) = 1,$$

prove that $1 + \cos \alpha + \cos \beta + \cos \gamma = 0$.

(ii) Eliminate θ from the equations

$$\frac{x}{a} \cos \theta + \frac{y}{b} \sin \theta = 1,$$

$$x \sin \theta - y \cos \theta = (a^2 \sin^2 \theta + b^2 \cos^2 \theta)^{\frac{1}{2}}.$$

8. (i) If S be the area of the in-circle and S_1, S_2, S_3 the areas of the escribed circles, prove that

$$\frac{1}{\sqrt{S}} = \frac{1}{\sqrt{S_1}} + \frac{1}{\sqrt{S_2}} + \frac{1}{\sqrt{S_3}}.$$

(ii) If t_1, t_2, t_3 be the lengths of the tangents from the ex-centres to the circumcircle of a triangle, prove that

$$\frac{1}{t_1^2} + \frac{1}{t_2^2} + \frac{1}{t_3^2} = \frac{a+b+c}{abc},$$

where a, b, c are the sides of the triangle.

9. Express $\tan^{-1}(x + iy)$ in the form $\alpha + i\beta$.

If $c = \cos^2 \theta - \frac{1}{3} \cos^3 \theta \cos 3\theta + \frac{1}{5} \cos^5 \theta \cos 5\theta - \dots$, show that $\tan 2c = 2 \cot^2 \theta$.

10. Prove that

$$\sin \theta = \theta \left(1 - \frac{\theta^2}{\pi^2}\right) \left(1 - \frac{\theta^2}{2^2 \pi^2}\right) \left(1 - \frac{\theta^2}{3^2 \pi^2}\right) \dots$$

Show that

$$\frac{1}{3^4} + \frac{3}{5^4} + \frac{6}{7^4} + \frac{10}{9^4} + \dots = \frac{\pi^2}{64} \left(1 - \frac{\pi^2}{12}\right).$$

11. (i) Sum to n terms

$$\frac{1}{2} \sec \theta + \frac{1}{2^2} \sec \theta \sec 2\theta + \frac{1}{2^3} \sec \theta \sec 2\theta \sec 2^2 \theta + \dots$$

(ii) Expand

$$\frac{2x \cos \theta}{1 - 2x \sin \theta + x^2}$$

in a series of sines and cosines of multiples of θ .

12. Prove that

$$\frac{1}{2} \theta^2 = \frac{1}{2} \sin^2 \theta + \frac{2}{3} \frac{\sin^4 \theta}{4} + \frac{2 \cdot 4}{3 \cdot 5} \frac{\sin^6 \theta}{6} + \text{etc.}$$

Hence or otherwise show that

$$\frac{\phi}{\sin \phi \cos \phi} = 1 + \frac{2}{3} \sin^2 \phi + \frac{2 \cdot 4}{3 \cdot 5} \sin^4 \phi + \dots$$

THIRD PAPER

Candidates are required to give their answers in their own words as far as practicable.

Candidates are required to answer Questions 1 and 9, and any FOUR of the remaining questions.

The figures in the margin indicate full marks.

[N. B.—The coordinates involved in the Cartesian equations of curves or surfaces are rectangular.]

1. (i) Show that the condition that the two right lines

18

$$\frac{x-\alpha}{l} = \frac{y-\beta}{m} = \frac{z-\gamma}{n} \text{ and } \frac{x-\alpha'}{l'} = \frac{y-\beta'}{m'} = \frac{z-\gamma'}{n'}$$

may intersect is

$$\begin{vmatrix} \alpha - \alpha' & \beta - \beta' & \gamma - \gamma' \\ l & m & n \\ l' & m' & n' \end{vmatrix} = 0$$

and fix the actual point of intersection when this condition is fulfilled.

(ii) Verify that, whatever be the value of the parameter α , the straight lines L , M , viz.

$$\frac{x - a \cos \alpha}{a \sin \alpha} = \frac{y - b \sin \alpha}{-b \cos \alpha} = \frac{z}{-c} \quad (L)$$

and

$$\frac{x - a \cos \alpha}{a \sin \alpha} = \frac{y - b \sin \alpha}{-b \cos \alpha} = \frac{z}{c} \quad (M)$$

meet at point (P), and calculate the coordinates of P in terms of α .

When, however, the parameter α varies, prove that the locus of P is a hyperboloid of one sheet (II), and that each of the two *variable* lines L , M traces out the *same* surface-locus II.

2. (i) Determine the perpendicular distance of a point (α' , β' , γ') from the straight line

16

$$\frac{x - \alpha}{l} = \frac{y - \beta}{m} = \frac{z - \gamma}{n}.$$

(ii) Adjust the direction-cosines (l , m , n) so that the perpendiculars, dropped from the points $(0, 0, 5)$ and $(0, 5, 0)$

on the line

$$\frac{x}{l} = \frac{y}{m} = \frac{z}{n},$$

may be respectively 4 and 3 units in length.

Hence, or otherwise, derive the equations of a *common tangent* line (through the origin) to the two spheres $x^2 + y^2 + z^2 - 10z + 9 = 0$ and $x^2 + y^2 + z^2 - 10y + 16 = 0$.

3. (i) Investigate the condition that the plane

16

$$lx + my + nz = 0$$

may cut the cone

$$ax^2 + by^2 + cz^2 + 2fyz + 2gzx + 2hxy = 0$$

in a pair of *perpendicular* generators.

(ii) If the right line (P), given by

$$\frac{x}{l} = \frac{y}{m} = \frac{z}{n}$$

be a generator of the cone

$$yz + zx + xy = 0,$$

prove that the plane

$$lx + my + nz = 0$$

contains two other generating lines (Q , R), which are perpendicular to each other as also to the line P . How many triads of orthogonal generators like (P , Q , R) are available?

4. (i) Work out the condition of tangency of the line 16

$$\frac{x - \alpha}{l} = \frac{y - \beta}{m} = \frac{z - \gamma}{n}$$

with ellipsoid

$$\frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z^2}{c^2} = 1,$$

and deduce immediately the equation of the enveloping cylinder, whose generators are parallel to the fixed line

$$\frac{x}{l} = \frac{y}{m} = \frac{z}{n}.$$

- (ii) For the ellipsoid

$$\frac{x^2}{3} + \frac{y^2}{2} + z^2 = 1,$$

prove that the enveloping cylinder, having its generators parallel to the line

$$\left. \begin{aligned} x &= 0, \\ y &= z \end{aligned} \right\}$$

meets the plane $z = 0$ in a circle.

5. (i) Prove that the area of the section of the ellipsoid 16

$$\frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z^2}{c^2} = 1$$

made by the plane (K), viz.

$$lx + my + nz = 0,$$

is

$$\frac{abc}{\sqrt{a^2l^2 + b^2m^2 + c^2n^2}}.$$

(ii) If the plane K turns about the origin O in such a way that the area of its section may retain a constant value, viz.

$$\frac{acb}{\sqrt{a^2 + b^2 + c^2}},$$

verify that the normal to K (drawn through O) traces out the conical locus

$$(b^2 + c^2)x^2 + (c^2 + a^2)y^2 + (a^2 + b^2)z^2 = 0.$$

6. (i) Construct the equation of the polar plane of a point $P(x' y' z')$ with respect to the paraboloid

$$\frac{x^2}{a^2} + \frac{y^2}{b^2} = \frac{2z}{c}.$$

(ii) Prove that, wherever P may lie on the straight line

$$\begin{aligned} x &= 0, \\ y &= \frac{2}{3}z, \end{aligned}$$

its polar plane with respect to the paraboloid

$$9x^2 + 13y^2 = 2z$$

cuts the surface itself along a circle.

7. (i) Ascertain the condition that the plane 16

$$lx + my + nz = p$$

may touch the quadric

$$ax^2 + by^2 + cz^2 = 1,$$

and deduce or find directly the equation of the *director-sphere* (i.e. the locus of the point of intersection of a triad of *orthogonal* tangent planes).

(ii) Prove that the quadrics

$$\frac{(x-1)^2}{3} + \frac{(y-2)^2}{5} + \frac{(z-3)^2}{7} = 1$$

and

$$\frac{(x-1)^2}{10} + \frac{(y-2)^2}{8} + \frac{(z-3)^2}{3} = 1$$

have the *same* director-sphere, and find the equation of this sphere.

8. (i) If m_1, m_2, \dots, m_n be n masses placed respectively at the extremities of the n vectors $\alpha_1, \alpha_2, \dots, \alpha_n$ (supposed drawn from the same origin), prove that their centre of mass is the terminal point of the vector 16

$$\frac{m_1 \alpha_1 + m_2 \alpha_2 + \dots + m_n \alpha_n}{m_1 + m_2 + \dots + m_n}$$

(ii) Masses, proportional to 1, 4, 6, 8, at the extremities of the vectors $\alpha, \beta, \gamma, \delta$, which conform to the relations

$$\text{and } \left. \begin{aligned} 5\alpha + 2\beta + 18\gamma &= 0 \\ \alpha + 5\beta + 12\delta &= 0 \end{aligned} \right\}.$$

Prove that the mass-centre coincides with the origin of vectors.

9. (i) If three vectors α, β, γ be resolved along three orthogonal unit vectors i, j, k in the following forms 18

$$\begin{aligned}\alpha &= a_1 i + b_1 j + c_1 k, \\ \beta &= a_2 i + b_2 j + c_2 k, \\ \gamma &= a_3 i + b_3 j + c_3 k,\end{aligned}$$

establish the formula

$$S\alpha\beta\gamma = - \begin{vmatrix} a_1 & b_1 & c_1 \\ a_2 & b_2 & c_2 \\ a_3 & b_3 & c_3 \end{vmatrix},$$

and deduce or prove otherwise that the scalar quantity

$$S(\beta - \gamma)(\gamma - \alpha)(\alpha - \beta)$$

vanishes identically.

(ii) Reduce the expression

$$S(\beta + \gamma)(\gamma + \alpha)(\alpha + \beta)$$

to its *simplest* form, and prove that it vanishes whenever the vectors α, β, γ (drawn through a common origin) are *coplanar*.

10. (i) Given that α, β denote the vectors $\overline{OA}, \overline{OB}$, devise a geometrical construction for the vector 16

$$\rho = m\alpha + n\beta,$$

where m and n are *known* scalars, and show that the vector ρ will terminate on the line AB , provided m, n conform to the relation

$$m + n = 1$$

(ii) From a certain origin are drawn four vectors, viz.

$$\alpha, \beta, \alpha + 2\beta, 2\alpha + \beta$$

Prove that their extremities, joined in order, determine a parallelogram, which becomes a rectangle if only α, β be mutually perpendicular.

FOURTH PAPER

Candidates are required to give their answers in their own words as far as practicable.

You are required to attempt the FIRST, EIGHTH, and ELEVENTH questions ; full marks may be obtained by answering these and any FOUR of the remaining questions.

1. Define carefully the terms *limit*, *continuity*, *differential coefficient* as used with reference to a function of a single variable.

Trace the curve

$$y = \lim_{t \rightarrow 0} \left\{ x^2 \tan^{-1} \frac{x}{t^2} \right\}.$$

A function $f(x)$ equals zero or $x \cos^2 \frac{1}{x}$ according as x is zero or different from zero. Prove that $f'(0)$ is non-existent.

2. Prove that, under certain conditions to be specified,

$f(x+h) = f(x) + hf'(x) + \frac{h^2}{2!} f''(x) + \dots + \frac{h^r}{r!} f^{(r)}(x + \theta h)$, and show that the limiting value of θ as h is indefinitely diminished is $\frac{1}{r+1}$.

3. (i) Find the values of x for which the function

$$2x^3 + 15x^2 + 36x - 2$$

has a maximum or a minimum.

(ii) In a submarine telegraph cable the speed of signalling varies as $x^2 \log \frac{1}{x}$, where x is the ratio of the radius of the core to that of covering.

Show that the speed is greatest when this ratio is $\frac{1}{\sqrt{e}}$.

4. (i) If

$U = f(ax^2 + 2hxy + by^2)$ and $V = \phi(ax^2 + 2hxy + by^2)$, prove

that

$$\frac{\delta}{\delta y} \left(U \frac{\delta V}{\delta x} \right) = \frac{\delta}{\delta x} \left(U \frac{\delta V}{\delta y} \right).$$

(ii) If three variables x , y , and z are connected by a relation $\phi(x, y, z) = 0$,

prove that
$$\left(\frac{\delta z}{\delta y}\right)_x \cdot \left(\frac{\delta x}{\delta z}\right)_y \cdot \left(\frac{\delta y}{\delta x}\right)_z = -1,$$

where $\left(\frac{\delta y}{\delta x}\right)_z$ denotes the differential coefficient of y with respect to x when z is regarded as constant and $\left(\frac{\delta z}{\delta y}\right)_x$ and $\left(\frac{\delta x}{\delta z}\right)_y$ have similar meanings.

5. (i) In the ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$,

if $x = a \sin t$, prove that

$$\frac{ds}{dt} = a \sqrt{1 - e^2 \sin^2 t}.$$

(ii) In the equiangular spiral $r = ae^{\theta \cot \alpha}$, prove that the loci of the extremities of the polar subtangent and subnormal are also equiangular spirals.

6. Establish the formula for the radius of curvature of a curve when its equation is given in Cartesian coordinates.

In the catenary $y = a \cosh \frac{x}{a}$, prove that $\rho = \frac{y^2}{a}$.

7. Evaluate any three of the following :

$$\int (a^2 + x^2)^{\frac{5}{2}} dx, \quad \int \frac{x^2 dx}{(x \sin x + \cos x)^2}, \quad \int \frac{dx}{x^3 - x^4 - x^5 + x^6},$$

$$\int_{\frac{1}{e}}^1 \log(\log x) dx.$$

8. Find the values of the definite integrals :

$$\int_0^\pi \frac{x \sin x}{1 + \cos^2 x} dx;$$

$$\int_0^{2\pi} \frac{dx}{a+b \cos x + c \sin x}, \text{ when } a > \sqrt{b^2 + c^2} > 0;$$

$$\int_0^{\pi} \tan^7 x dx.$$

9. (i) A function $f(x)$ equals 0, 1, or -1 according as x is 0, > 0 , or < 0 ; expand $f(x)$ in Fourier series.

(ii) The coordinates of a point Q on the axis of x are ξ , 0, and those of any other point are x , y . Find the value of

$$V = \int_{-l}^l \frac{d\xi}{PQ}.$$

From your result, show that if

$$x = \sqrt{a^2 + l^2} \cos \phi, \quad y = b \sin \phi,$$

then

$$V = \log \frac{\sqrt{a^2 + l^2} + l}{\sqrt{b^2 + l^2} - l}.$$

10. Trace the curve $x^3 + y^3 = 3axy$, and find the area of its loop.

11. Solve completely the differential equations :

$$(i) (2x - x^2) + (2x - 3)y - x(x-1) \frac{dy}{dx} = 0$$

$$(ii) \frac{d^2 y}{dx^2} - 4 \frac{dy}{dx} + y = e^{2x} \sin 2x.$$

$$(iii) \frac{d^2 y}{dx^2} + \left(\frac{dy}{dx} \right)^2 + \frac{dy}{dx} = 0.$$

$$12. (i) \text{ Solve } x^4 \frac{d^2 y}{dx^2} = y.$$

(ii) Find the the general equation of the system of curves which cut orthogonally the confocal ellipses

$$a^2 + \lambda + \frac{y^2}{b^2 + \lambda} = 1,$$

γ being the variable parameter.

FIFTH PAPER

Candidates are required to give their answers in their own words as far as practicable.

Attempt six questions only.

The questions are of equal value.

1. An elliptic lamina of eccentricity e , divided into two pieces along the minor axis, is placed with its major axis horizontal in a loop of string attached to two fixed points so that the portions of the strings not in contact with the ellipse are vertical. Show that there cannot be equilibrium unless

$$(6\pi e)^2 < (9\pi - 4)(3\pi + 4).$$

2. A system of bodies being placed at rest in some position, it is given that the work of the external forces is zero for all small displacements which do not infringe on the constraints. Prove that the system is in equilibrium.

Six equal heavy bars are freely jointed at their extremities; one is fixed on a horizontal plane and the system lies in a vertical plane; the middle points of the two upper non-horizontal bars are connected by a rope in a state of tension. Find the tension of this rope.

3. An elliptic cylinder rests in limiting equilibrium between a rough vertical and an equally rough horizontal plane, the axis of the cylinder being horizontal and the major axis of the ellipse inclined to the horizon at an angle of 45° . Find the coefficient of friction in terms of the eccentricity of the ellipse.

4. (i) Water is poured gently into a cylindrical cup of uniform thickness and density; prove that the locus of the centre of gravity of the water, the cup, and its handle is a hyperbola.

(ii) Find the centre of mass of a quadrant or an ellipse included by the semi-axes, the density at any point being proportional to the product of the coordinates of this point.

5. (i) A flexible inextensible string is attached to two fixed points and each element of its length is acted on by a force in a constant direction, the magnitude of the force being proportional to the projection of the element on a line perpendicular to the direction of the force. Find the figure of the string.

(ii) Show that it is impossible to pull a heavy string by forces at its extremities so as to make it quite straight unless the string is vertical.

6. (i) At three points on the path of a projectile the inclinations of the tangents to the horizontal are $\alpha + \beta$, α , $\alpha - \beta$, and the speeds are v , v' , v'' . Show that

$$\frac{1}{v} + \frac{1}{v''} = \frac{2 \cos \beta}{v'}.$$

(ii) Prove that the times of flight t, t' corresponding to the two directions of projection for which the horizontal range has the same value are connected with the elevations θ, θ' by the relation

$$\frac{t^2 - t'^2}{t^2 + t'^2} = \frac{\sin(\theta - \theta')}{\sin(\theta + \theta')}.$$

7. Two bodies of masses m and m' are attached to the lower end of an elastic string, whose upper end is fixed, and hang at rest; m' falls off. Show that the distance of m from the upper end of the string at time t is

$$a + b + c \cos \left(\sqrt{\frac{g}{b}} t \right),$$

where a is the unstretched length of the string, and b and c the distances by which it would be stretched when supporting m and m' respectively.

8. (i) Obtain the accelerations of a moving point referred to rectangular axes which are not fixed in space but which revolve in any manner about the origin in their own plane.

(ii) Show that the path of a point P which possesses two constant velocities u and v , the first of which is in a fixed direction and the second of which is perpendicular to the radius OP drawn from a fixed point O , is a conic of which the focus is O and the eccentricity is $\frac{u}{v}$.

9. (i) Show that for a central orbit (for an attractive force)

$$P = \frac{h^2}{p^3} \frac{dp}{dr}.$$

(ii) In a central orbit the force is $\mu u^2 (3 + 2a^2 u^2)$; if the particle be projected at a distance a with a velocity $\sqrt{\frac{5\mu}{a^3}}$ in a direction making $\tan^{-1} \frac{1}{2}$ with the radius, show that the equation to the path is $r = a \tan \theta$.

10. (i) Prove that a body projected from the earth's surface with speed exceeding seven miles per second will not in general return to the earth.

(ii) A heavy chain, of length l , is held by its upper end so that its lower end is at a height l above a horizontal plane; if the upper end is let go, show that at the instant when half the chain is coiled up on the plane the pressure on the plane is to the weight of the chain in the ratio of 7:2.

SIXTH PAPER

Candidates are required to give their answers in their own words as far as practicable.

SIX questions to be attempted, THREE from each group.

GROUP A

1. Prove from the definition of a perfect fluid that the pressure at a point in a perfect fluid is the same in all directions. When a liquid is free from external force, show, from first principles, that the pressure is uniform.

If the attraction at a point distant r from the centre of a liquid globe of radius a and of uniform density be $g \frac{r}{a}$, find the pressure at an internal point of the globe (assuming the surface to be free). Calculate the pressure at the centre.

2. Find the centre of pressure of a triangular lamina with one side in the surface of a liquid.

A horizontal (cylindrical) boiler has a flat bottom and its ends are plane and semi-circular. If the boiler be just full of water, find the pressure on any plane semi-circular end and the point through which this pressure may be supposed to act.

3. Find the condition of stability of a floating body.

A rectangular block of a certain material floats immersed to a depth of 6 in. in water, with one pair of faces horizontal, these faces being 1 ft. square each. Find for what density of the material the equilibrium will be stable.

4. (i) If the absolute temperature of the atmosphere diminish upwards according to the law

$$\frac{T}{T_0} = 1 - \frac{z}{c},$$

prove that

$$p = p_0 \left(1 - \frac{z}{c} \right)^H,$$

where p_0 is the pressure, T_0 the absolute temperature at the surface ($z = 0$), and H the height of the homogeneous atmosphere.

(ii) A bottle with capacity V is filled with water and is immersed to a depth z . If now the water be expelled from the bottle by pumping in air, show that the necessary work is

$$(z+h)V \log \left(1 + \frac{z}{h} \right) + zV,$$

where h is the height of the water barometer.

5. How would you find the total pressure on a curved surface immersed in a liquid?

An open hemispherical shell is filled with water and closed by a thin plate. It is then inverted and placed on a table. Show that the shell will be lifted unless its weight be at least half that of the contained water.

GROUP B

6. Describe with neat diagrams the various coordinates used for locating the position of a heavenly body.

At two different stations the same two stars are observed to rise together. Show that the stations must have the same latitude.

7. Describe Bradley's method of finding the coefficient of astronomical refraction.

The declination of a star is 45° . Show that the change in the declination produced by refraction when the real altitude of the star is 45° is $2\kappa \sin \phi - \kappa$, where ϕ is the latitude of the place and κ the coefficient of refraction.

8. How is the horizontal parallax of the moon found?

Find the horizontal parallax of the moon, being given that the moon's distance is 60 times the radius of the earth.

9. What are precession and nutation? Represent them on the celestial sphere. Show by a figure the effect of precession on the declination and R.A. of a star.

Explain clearly the physical cause of precession and nutation.

10. Describe fully the theory of Foucault's pendulum experiment.

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FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

Only SIX questions to be attempted, of which not more than THREE to be selected from the same group.

Each question carries 16 marks, 4 marks reserved for special excellence and neatness.

GROUP A

1. (i) Solve the equation

$$\sin 2\theta \sec 4\theta + \cos 2\theta = \cos 6\theta.$$

- (ii) Show that if θ lies between 0 and π ,

$$\cot \frac{1}{2}\theta - \cot \theta > 2.$$

2. (i) If $A + B + C = \pi$, find the value of

$$\tan \frac{A}{2} \tan \frac{B}{2} + \tan \frac{B}{2} \tan \frac{C}{2} + \tan \frac{C}{2} \tan \frac{A}{2}$$

in the simplest form.

- (ii) Prove that in a triangle ABC ,

$$4 R \sin A \sin B \sin C = a \cos A + b \cos B + c \cos C.$$

3. (i) Solve a triangle having given two sides and the angle opposite to one of them, and illustrate by a figure the case when the solution is ambiguous.

(ii) In the above case, the area of one of the triangles is three times that of the other; show that if b be the greater of the given sides and a the less, $\frac{b}{a}$ is less than 2.

4. (i) Show that

$$\sin^{-1} \frac{a-c}{a+c} - 2 \sin^{-1} \sqrt{\frac{a}{a+c}}$$

is an odd multiple of $\frac{\pi}{2}$.

(ii) If $\cos^{-1} x + \cos^{-1} y + \cos^{-1} z = \pi$, prove that

$$x^2 + y^2 + z^2 + 2xyz = 1.$$

5. (i) Assuming De Moivre's Theorem when n is a positive integer, show that

$$\cos n\theta = \cos^n \theta - \frac{n(n-1)}{2} \cos^{n-2} \theta \sin^2 \theta + \dots$$

(ii) If $2 \cos \alpha = a + \frac{1}{a}$, $2 \cos \beta = b + \frac{1}{b}$, etc., prove that

$$2 \cos (\alpha + \beta + \gamma + \dots) = abc \dots + \frac{1}{abc \dots}.$$

6. (i) Find the sum of the following n terms :

$$\cos \alpha + \cos (\alpha + \beta) + \cos (\alpha + 2\beta) + \dots + \cos \{\alpha + (n-1)\beta\}.$$

(ii) Find the sum of

$$\cos^3 \alpha + \cos^3 (\alpha + \beta) + \cos^3 (\alpha + 2\beta) + \dots + \cos^3 \{\alpha + (n-1)\beta\}.$$

GROUP B

7. (i) Show that every linear equation in x and y represents a straight line.

(ii) Given the vertical angle and the sum of the sides of a triangle, find the locus of a point where the base is cut in a given ratio.

8. (i) Find the equation of the straight lines bisecting the angles between the two straight lines.

$$ax^2 + 2hxy + by^2 = 0.$$

(ii) Show that the angle between one of the lines given by $ax^2 + 2hxy + by^2 = 0$ and one of the lines $ax^2 + 2hxy + by^2 + \lambda(x^2 + y^2) = 0$ is equal to the angle between the other two lines of the system.

9. (i) Find the equation of a circle in rectangular coordinates passing through three given points, viz.

$$x_1, y_1; x_2, y_2; x_3, y_3.$$

(ii) Show that the circle $x^2 + y^2 - 2ax - 2ay + a^2 = 0$ touches the axes of x and y , and find the chord of contact.

10. (i) Find the locus of the middle points of a system of parallel chords of a parabola.

(ii) How many chords may be drawn through a given point inside a parabola so as to be bisected at that point? Give reasons for your answer.

11. (i) Show that the straight line

$$y = mx + \sqrt{a^2 m^2 + b^2}$$

always touches an ellipse, m being a parameter.

(ii) Use this fact to find the locus of the point of intersection of two tangents to an ellipse, which are at right angles to one another.

12. (i) Find the equation of a hyperbola when referred to its asymptotes as axes of coordinates.

(ii) Prove that the area of the triangle cut off from the asymptotes by a tangent to a hyperbola is constant.

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

Answer any SEVEN questions, of which not more than FOUR must be from one group.

The questions are of equal value.

GROUP A

1. Find from first principles the differential coefficient of $\tan^{-1}x$.

If $v_n = \log v_{n-1}$, and $v_1 = \log x$, find $\frac{dv_n}{dx}$.

2. Explain what is meant by a partial differential coefficient of a function of two or more variables.

If $u = 3(ax + by + cz)^2 - (x^2 + y^2 + z^2)$,
and $a^2 + b^2 + c^2 = 1$,

find the value of $\frac{\delta^2 u}{\delta x^2} + \frac{\delta^2 u}{\delta y^2} + \frac{\delta^2 u}{\delta z^2}$.

3. State (without proof) Maclaurin's Theorem for the expansion of a function of x in ascending powers of x .

Expand $\int_0^x e^{\sin x} dx$ in powers of x as far as x^4 .

4. Show that the length of an arc of the curve whose equation is $x=f(t)$, $y=f'(t)$, where t is a parameter, is

$$\int \left\{ \left(\frac{dx}{dt} \right)^2 + \left(\frac{dy}{dt} \right)^2 \right\}^{\frac{1}{2}} dt.$$

Hence find the length of an arc of the cycloid

$$x=a(\theta + \sin \theta), \quad y=a(1 + \cos \theta).$$

5. Define the radius of curvature of a curve, and find its formula in rectangular Cartesian coordinates.

Find the radius of curvature and the coordinates of the centre of curvature at the point (3, 4) of the rectangular hyperbola $xy=12$.

GROUP B

6. Integrate :

$$(i) \int \frac{(x^2 + 4)dx}{x^2 + 2x + 3}, \quad (ii) \int \sec x dx.$$

7. If the surface density of a circular disc bounded by $x^2 + y^2 = a^2$ be given to vary as the square of the distance from the y -axis, find the mass of the disc.

8. If u and v be functions of x , show that

$$\int uv dx = u \left(\int v dx \right) - \int \left(\int v dx \right) \frac{du}{dx} dx.$$

Evaluate $\int (\log x)^2 dx$.

9. From a fixed point A on the circumference of a circle of radius a , the perpendicular AN is let fall on the tangent at any other point P on it. Prove that the greatest area the triangle APN can have is $\frac{3\sqrt{3}}{8}a^2$.

10. Find the general solutions of the equations :

$$(i) \frac{dy}{dx} + \frac{2}{x}y = x^2;$$

$$(ii) (2x + 3y - 6) \frac{dy}{dx} = 6x - 2y - 7.$$

11. Solve the following :

$$(i) \frac{d^2y}{dx^2} - 2 \frac{dy}{dx} - 3y = 0;$$

$$(ii) \frac{d^2x}{dt^2} + \mu^2 x = 0.$$

THIRD PAPER

Candidates are required to give their answers in their own words as far as practicable.

Any six questions carry full marks ; but not more than FOUR from either group should be attempted.

The questions are of equal value.

GROUP A

1. Prove that the pressure at any point of a fluid at rest is the same in all directions.

How much water must be added to 27 oz. of a salt solution whose specific gravity is 1.08 so that the specific gravity of the mixture may be 1.05?

2. Prove that the common surface of two heavy homogeneous liquids, which do not mix, is a horizontal plane.

Find the whole pressure on any plane surface immersed in a liquid, and deduce the total thrust on each of the plane ends of a circular cylinder, of height h and radius of base a , the middle point of the cylinder being at the depth c below the surface of the fluid, and its axis being inclined at an angle θ to the vertical.

3. A substance, whose density is ρ , is weighed by means of weights, the density of which is ρ' ; if σ be the density of the air, find an approximately true weight corresponding to any apparent weight.

A cylinder of wood whose weight is 15 lb. and length 3 ft. floats in water with its axis vertical and half immersed in water. It is depressed six inches more and tied by a string to the bottom of the vessel in which the water is contained. Find the tension of the string.

4. Find the centre of pressure of a triangle immersed in homogeneous liquid with one side in the surface.

Determine the specific gravity of a liquid with the aid of a common hydrometer.

5. Define a perfect gas.

Two volumes, v_1 and v_2 of different gases at different pressures p_1 and p_2 , are mixed together and put into a vessel of volume V ; find the resulting pressure, the temperature being constant.

The specific gravity of mercury is 13.6, and the barometer stands at 30 inches. A bubble of gas, the volume of which is 1 cubic inch when it is at the bottom of a lake 170 feet deep, rises to the surface. What will be its volume when it reaches the surface?

6. A diving bell is lowered into water. If no air be supplied from above, find the compression of the air inside the bell at a given depth a . Find also the amount of air at atmospheric pressure that must be forced in so that at this depth the water may not rise within the bell.

Explain the working of a force-pump in which a continuous stream may be obtained.

GROUP B

1. What do you mean by the Zodiac?

Prove that the altitude of a star is greatest when on the meridian.

Prove that the altitude of the celestial pole at any place is equal to the latitude of the place.

Give a proof of the earth's rotation from the experiment of letting a body fall from the top of a high tower.

2. Describe the transit instrument, and explain how it is used. Explain how the instrument is corrected for the errors to which its readings are subject.

The zenith distances of a star at lower and upper culminations are found, after correcting for refraction, &c., to be $76^{\circ} 4'$ and $2^{\circ} 52' S.$ respectively. Find the latitude of the place, and the declination of the star.

3. Establish the law of refraction of a heavenly body, $x = K \tan z$, and find K when the latitude of the place of observation is known.

The meridian altitudes of a circumpolar star are 20° and 30° and the corresponding corrections for refraction are $1' 40''$ and $1' 9''$; find the latitude of the place.

4. Explain the phenomenon of the seasons.

What effect would be produced upon the seasons if the earth's axis were in the plane of the ecliptic, or were perpendicular to it?

How does the duration of twilight at a given place alter with the season of the year?

5. Explain the effect of parallax on a heavenly body.

The sun's horizontal parallax being $8.8''$, find the true zenith distance corresponding to an observed zenith distance of 60° .

Find the conditions for (i) a lunar, and (ii) a solar eclipse.

6. State the causes to which the equation of time is due.

Establish: length of afternoon—length of morning=twice the equation of time.

Assuming the mean distance of Venus to be 0.72, that of the earth being unity, find the periodic time of Venus.

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FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Answer any FOUR out of the first nine questions. The TENTH question is compulsory.

1. Assuming the earth to be a homogeneous sphere, calculate the gravitational potential at points (a) inside, (b) on, and (c) outside its surface. 18

2. Write a short note on the accurate determination of gravity at any place. Discuss the effects of rotation and latitude on the apparent value. 18

3. An elastic material is available in the form of thin rectangular bars. How would you proceed to find out its Young's modulus and coefficient of rigidity? 18

4. A mass of 500 grams, in the form of a cylinder 5 cm. diameter and 10 cm. high, is suspended from the ceiling of a room by a thin wire 3 metres long, and 0.1 mm. diameter, the wire passing through the axis of the cylinder. 20 torsional oscillations are observed to take place in a minute. Calculate the torsional rigidity of the wire. Establish the formula you would use. 18

5. A liquid of density 1.05 is observed to rise 5 cm. in a capillary tube of 0.05 mm. bore, and the liquid wets the surface of the tube.

Assuming $g=981$, calculate the excess pressure in dynes per sq. cm. inside if a spherical bubble 3 cm. diameter be blown from the same liquid. 18

6. Explain the origin of the phenomena of surface tension. What is the difference between the surface tension and the surface energy of a liquid? Can the surface energy be calculated from the surface tension? 18

7. You are given a tuning-fork. How would you proceed to find its frequency in absolute measures? 18

8. How would you proceed to find out the velocity of sound in argon, which is available compressed in cylinders? What important evidence regarding the nature of the molecule can be obtained from the result? 18
9. How would you proceed to investigate the presence of the different harmonics in a bowed string? How does the position of the bowing-point affect the different harmonics? 18
10. Write a short essay on either of the following subjects:— 28
- The universality of the law of gravitation.
 - Forced and free vibrations of bodies.

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

Six questions are to be answered.

The questions are of equal value.

- Define coefficient of thermal conductivity of a solid.
 - Find the time required to form a thickness of 2 cm. of ice on a pond when the air in contact with its upper surface is maintained at -12°C .

The density of ice is 0.917 gm., its latent heat is 80 thermal units, and its heat conductivity is 0.0022 c.g.s. units.

- State Van der Waals' equation. What are the critical constants of a gas? Explain clearly what is meant by the 'Law of Corresponding States'.

- What do you understand by the term 'black-body radiation'? How is it realized in practice? Deduce Stefan's law of black-body radiation from thermo-dynamical considerations.

- What experimental arrangements would you use for ascertaining—
(a) the boiling-point of liquid hydrogen, (b) the melting-point of pure silver? Give reasons for your choice.

- Deduce from thermodynamical considerations the effect of pressure on the melting-point of solids.

If a substance of latent heat 50 melts *in vacuo* at 127°C ., and contracts one-tenth of its volume in so doing, at what temperature will it melt at a pressure of 100 atmospheres?

- Define entropy.

A certain mass of gas is caused to expand isothermally to n times its volume. The same mass of the gas under the same initial conditions of pressure, temperature, and volume is then caused to expand at constant pressure to the same final volume. Compare the change of entropy in the two cases. ($\gamma=1.4$)

- Assuming the properties of a Carnot engine, show how a scale of temperature may be devised which is independent of the properties of any particular substance. What fixes the zero of such a scale?

How may this absolute scale be realized approximately in practice?

8. State briefly what is meant by Kinetic Theory of Gases, and derive an expression for the intrinsic energy of an ideal gas.

9. Write a note on the change of specific heat of bodies at low temperatures, stating in a general way the theories that have been proposed to account for it.

THIRD PAPER

Candidates are required to give their answers in their own words as far as practicable.

Only six questions are to be attempted.

The questions are of equal value.

1. A small pencil of light diverging from a point in a medium of refractive index μ is incident on the plane surface of the medium and then passes into air. Show that the emergent light appears to diverge from two focal lines in the first medium. Find the position of the focal lines and devise an experiment to demonstrate their real existence.

2. What are the cardinal points of a lens?

A glass hemisphere of radius r and R.I. μ is treated as a lens, rays passing through it being limited to those nearly coinciding with the axis. Show that one principal point coincides with the intersection of the convex surface with the axis, while the other principal point is within the lens at a distance r/μ from the plane surface.

Prove also that the focal length of the lens is equal to $r/(1 - \mu)$.

3. Explain what you mean by 'refractive index' of a medium.

Show that when light passes through a thin prism the deviation does not vary with the angle of incidence, when the incidence is nearly perpendicular.

In the case of normal incidence upon the first surface of the prism,

show that the limiting angle of the prism is $\sin^{-1}\left(\frac{1}{\mu}\right)$ such that the ray does not emerge when it meets the second surface.

4. Distinguish between the following two methods of interference of light:—(a) Newton's rings, (b) bi-prism. Why is an extended source of light necessary in the first case?

Newton's rings are formed between a plane glass surface and a lens. The diameter of the fifth black ring is 9 mm. when sodium light is used and light passes through the film at an angle of 30° to the normal. Find the radius of the glass lens.

5. Light falls on a grating. Show that for minimum deviation the emergent light goes off at the same angle with the grating as the incident light.

At what angle between a sodium light and the grating of 10,000 lines per inch may the deviation for the fifth order spectrum be a minimum?

6. Describe any anomaly in the dispersion of light with which you are familiar. How do you propose to explain it?

7. Under what conditions do two polarized beams of light interfere?

A thin plate of Iceland spar cut perpendicular to the axis is placed between a crossed pair of tourmalines, and a white cloud is viewed through the combination. Describe the phenomena observed, and also their variation as the plate is rotated in its own plane.

8. What is the main difference between the natural optical rotation and the magnetic rotation of the plane of polarization? Describe how you can determine Verdet's constant for substances in solution. How does it depend upon the magnetic properties of the substances?

9. What do you understand by 'spectral series'? Describe any series you know of.

FOURTH PAPER

Candidates are required to give their answers in their own words as far as practicable.

Six questions are to be answered.

The questions are of equal value.

1. (a) Derive an expression for the field at any point and its direction due to a small magnet.

(b) Explain with a diagram how the lines of force due to a very small magnet can be accurately drawn, neglecting the influence of the earth's field.

2. (a) What is a magnetic shell?

Derive an expression for the work done in carrying unit magnetic pole round a closed contour embracing an electric current.

(b) Find the field at any point due to a current passing through a linear conductor and state the nature of the distribution of the magnetic field.

3. Describe any form of sensitive quadrant electrometer and explain the principle of its working.

4. (a) Show that the Peltier coefficient for a junction of two metals is the product of the temperature and the thermo-electric power.

(b) One end of an iron wire is maintained at a temperature of 0°C , and the other at 100°C .

[Thermo-electric power of an iron-lead couple at 0°C . is 13.5 microvolts per degree Centigrade and at 100°C . is 10.3 microvolts per degree Centigrade.]

Calculate the Thomson effect in calories when a coulomb of electricity passes from the cold to the hot end of the wire.

5. Deduce the theory of the determination of the standard ohm by the rotating coil method. What is the dimension of ohm?

6. Discuss the production of electrical oscillations in a circuit containing capacity, inductance, and resistance. What will be the frequency of oscillation of a circuit which has a capacity of 2 microfarads, 0.15 henry as inductance, and a resistance of 2 ohms?

7. State briefly the theory of isotopes and describe any experimental method for their investigation.
8. State Einstein's photo-electric equation and discuss its importance in problems of modern physics.
9. Describe a method used for the determination of Alpha ray ranges.

PHYSICS—PASS

Examiners— {

- Mr. DWIJENDRAKUMAR MAJUMDAR, M.A.
- „ DWARKANATH MUKHERJEE, M.Sc.
- „ GANGADHAR MUKHERJEE, M.A.
- „ ABINASHCHANDRA SAHA, M.Sc.
- „ JITENDRANATH SEN, M.A.
- „ PROMODCHARAN SEN, M.Sc.

FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

Only SIX questions to be attempted.

The questions are of equal value.

1. Deduce an equation for the S.H. motion of a particle, explaining the terms period, phase, and epoch angle.

Two S.H. motions of the same period but of different amplitudes and phases are acting in the same direction on a particle. Show that the resultant motion is simple harmonic.

2. Describe any experiment for finding the value of the gravitation constant g , and show how from this, and other known quantities, the mean density of the earth can be calculated.

3. Define surface tension.

Deduce an expression for the excess of pressure of the air inside over that of the air outside a soap bubble of radius r . Describe an experiment in which the above principle is used to find the surface tension of soap solution.

4. Give an account of Andrew's experiments on carbon dioxide, showing by a sketch the general nature of the isothermals above and below the critical temperature.

5. Why is the specific heat at constant pressure of gas greater than that at constant volume?

Describe the method of finding the specific heat of constant volume of a gas with Joly's steam calorimeter, giving essential details.

6. Define thermal conductivity and distinguish it from thermometric conductivity.

Describe Forbes's experiment for finding the conductivity of a metal.

7. A convex and a concave lens, each 10 in. in focal length, are held coaxially at a distance 3 in. apart. Find the position of the image if the object is at a distance of 15 in. beyond (a) the convex lens, (b) the concave lens.

8. Describe the table spectroscope, and explain the working adjustments in detail.

9. Clearly distinguish between ordinary and plane polarized light. Describe and explain how with a Nicol's prism you would test whether a given beam of light is partially or completely polarized.

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

Six questions are to be attempted.

The questions are of equal value.

1. Explain how stationary waves are produced in a closed pipe. How do they differ from progressive waves?

A closed pipe 4 ft. long full of a certain gas resounds to a given tuning-fork. If an open pipe resounding to the same fork and containing air be 5 ft. long, what would be the velocity of sound in the gas, taking the velocity in air to be 1,120 ft./sec.?

2. Explain by means of a diagram, the production of heats.

Sixty-four tuning-forks are arranged in order of increasing frequency, any one of them giving four beats per second with the one next in order. If the last fork gives the octave of the first, calculate the frequency of the first.

3. What is meant by a 'neutral point' in a magnetic field?

The neutral point of a short magnet is 2.4 cm. from the centre of the magnet, which lies with its axis north and south and the N-pole pointing to the north. If the value of H be 0.21 C.G.S. units, what is the moment of the magnet?

4. State and explain Gauss's theorem regarding normal induction over a closed surface and, using the theorem or otherwise, prove that the electrostatic pressure of a charged conductor is $2\pi\rho^2$ per unit area, where ρ equals the surface density of charge.

5. Define potential, capacity, and specific inductive capacity.

Describe any instrument which may be advantageously employed for the measurement of small difference of potential.

6. How can you measure the current through a circuit (a) when it is direct, (b) when it is alternating?

A certain ammeter has a resistance of one ohm, and the full scale deflection is obtained when a current of 0.05 ampere flows through it. Find what shunt must be connected with it in order that the ammeter may read up to 100 amperes.

7. Explain the meaning of the term, and the cause of polarization of a voltaic cell. Give instances of the use in cells of a depolarizer, pointing out the chemical action that takes place in each case.

8. Explain in detail the working of an induction coil with special reference to the parts played by the iron core and the condenser. Can you call it a transformer? Give reasons for your answer.

9. Write short notes on any *four* of the following:—(a) ferro-magnetism, (b) γ -rays (gamma rays), (c) electro-chemical equivalent, (d) electrical oscillation, (e) electron and its charge, (f) Peltier effect, (g) dielectric constant.

CHEMISTRY

Paper-setters— (Pass and Honours)	{	PROF. JNANENDRACHANDRA GHOSH, D.Sc.
		DR. SUDHAMAY GHOSH, D.Sc.
		PROF. PRAFULLACHANDRA MITTER, M.A., Ph.D.
		MR. PRIYADARANJAN RAY, M.Sc.
		DR. JOGENDRACHANDRA BARDHAN, D.Sc.
		SIR PRAFULLACHANDRA RAY, Kt., C.I.E., D.Sc., Ph.D., F.C.S.

CHEMISTRY—HONOURS

Examiners— (Theoretical)	{	MR. BARUNCHANDRA DATTA, M.A.
		„ ASUTOSH MAITRA, M.A.
		„ DHIRENDRANATH MOOKERJEE, M.A.
		RAJENDRANATH SEN, M.A., M.Sc.

FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

Attempt FIVE questions only.

The questions are of equal value.

1. Discuss the effects of Kekule's ideas on the development of organic chemistry.

2. Discuss the evidence on which the formulas
 $\text{CH}_2\text{OH}(\text{CHOH})_4\text{CHO}$
 and $\text{CH}_2\text{OH}(\text{CHOH})_5\text{CO}\cdot\text{CH}_2\text{OH}$
 have been assigned to glucose and fructose respectively.

3. Write short notes on:—(a) pseudo-acid, (b) steric hindrance, (c) dynamic isomerism, (d) pinacol-pinacolone transformation.

4. Give a brief account of the synthesis of indigotin starting from naphthalene.

5. How are the following substances prepared:—(a) β -phenyl hydroxylamine, (b) methyl orange, (c) mandelic acid, (d) allyl iodide, (e) cinnamic acid, (f) croton-aldehyde, (g) terephthalic acid, (h) alanine?

6. Define orientation and explain a method of orientating benzene derivatives of the type $\text{C}_6\text{H}_4\text{X}_2$.

7. A monobasic acid was found to contain carbon, hydrogen, and oxygen only. The calcium salt on being heated yielded a distillate

which reacted with hydroxylamine to give a derivative containing 13.9 per cent of nitrogen. Calculate the approximate molecular weight of (a) the nitrogenous derivative, and (b) the original acid, and suggest a possible structural formula for each.

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

Only FIVE questions are to be answered.

The figures in the margin indicate full marks.

1. Write a short essay on the Periodic System of Elements, noting specially the recent improvements which have succeeded in eliminating all the anomalies of the earlier table of Mendelejeff and Lothar Meyer. 20

2. Compare the physical and chemical properties of the elements sulphur, selenium, and tellurium, with special reference to their hydrides, oxides, and hydroxides. 20

3. Write short notes on the following:—(a) rusting of iron, (b) per-acids and peroxides, (c) Nessler's solution, (d) self-oxidation and reduction. 20

4. Starting from phosphorus how would you prepare the different oxyacids of phosphorus? Discuss the constitution of these acids. 20

5. Describe what happens when— 20

(a) a solution of potassium dichromate is treated with hydrogen peroxide in sulphuric acid solution ;

(b) red lead is acted upon by nitric acid ;

(c) a solution of ferrous sulphate is added to a solution of silver nitrate ;

(d) silver chloride is treated with a solution of sodium thiosulphate ;

(e) an alkaline solution of stannous chloride is added to a solution of bismuth nitrate.

Give equations.

6. How are the following substances prepared and what are their properties:—(a) pure alumina, (b) nickel carbonyl, (c) sodium cobaltinitrite, (d) hydroxylamine hydrochloride? 20

7. Name, giving as many examples as you can, the different types of compounds formed by chromium, and show how the properties of these compounds vary with the valency of the chromium atom. What chemical resemblances between chromium and sulphur led Mendelejeff to place them together in the same group of the periodic table? 20

8. The composition of a compound is given by Ba = 46.12, S = 21.54 per cent., and the rest oxygen. Give the formula and name of the compound, and describe its preparation and properties. 20

THIRD PAPER

Candidates are required to give their answers in their own words as far as practicable.

Answer FIVE questions only.

All questions carry equal marks.

1. (a) The density of air at N.T.P. is 0.0013; according to Regnault C_p and C_v for air are 0.237 and 0.17 respectively. Explain how Mayer utilized these experimental data to calculate the mechanical equivalent of heat.

(b) Explain how the heat of formation of ethylene can be ascertained from the heats of combustion of carbon, hydrogen, and ethylene.

2. Explain clearly the principles underlying the processes for the liquefaction of air developed by (a) Linde, and (b) Claude.

3. Describe the phenomena that you will observe when the following systems are progressively cooled:—(a) a dilute solution of sodium chloride, (b) a concentrated solution of sodium chloride, (c) molten sulphur at 200°C., (d) molten sulphur at 140°C. Give explanations.

4. Define osmotic pressure. Describe how the osmotic pressure of a decinormal solution of cane sugar has been determined, and explain how the molecular weight of a solute can be determined by the measurement of the osmotic pressure of its solution.

5. Give an account of the work of Raoult in the domain of solutions.

6. From the velocity constants of decomposition and synthesis of hydriodic acid gas, as given below, calculate the equilibrium constants of the reversible reaction $2\text{HI} \rightleftharpoons \text{H}_2 + \text{I}_2$.

<i>Temp. in Centigrade</i>	<i>K Decomposition</i>	<i>K Synthesis</i>
780°	0.106	3.68
700°	0.003	0.17

From the above data, can you predict whether the heat of formation of hydriodic acid gas is positive or negative, and if so, how? What is the order of reaction in the photochemical decomposition of hydriodic acid gas?

7. How is the chemical energy of transformation in a Daniell cell related to the yield of electric energy by that cell? Explain why a Daniell cell may be used in the laboratory for obtaining electric current whereas a Weston cell cannot be used for this purpose.

8. The dissociation constants of acetic acid and ammonia are approximately the same, 2×10^{-5} ; the dissociation constant of water is 1×10^{-14} . Find out the concentrations of H^+ in decinormal solutions of sodium acetate and ammonium chloride respectively. Indicate how this information can be utilized in the choice of indicators to be used for titration of ammonia and acetic acid with hydrochloric acid and caustic soda respectively.

FOURTH PAPER

Candidates are required to give their answers in their own words as far as practicable.

Answer FIVE questions only.

All questions carry equal marks.

1. What are the theories advanced for the natural formation of petroleum? Which is the more probable, and why? How do Russian and American petroleum differ? Describe the isolation and use of the various products of technical value obtained from petroleum. What is a flash-point?
2. What are platinum metals? How is metallic platinum manufactured? Describe the properties and uses of the metal.
3. What is the theory of alcoholic fermentation? Describe in detail the preparation of alcohol from starch by the fermentation process, explaining clearly the different stages involved. What are the various by-products obtained? What are the important uses of alcohol?
4. Write short notes on the following:—(a) desmotropism, (b) co-ordination valency, (c) Walden inversion, (d) isotopes.
5. What is nascent state? What are the various hypotheses suggested to explain the phenomenon? Mention examples of different elements showing action in the nascent state.
6. Explain how the following substances are prepared on a large scale and purified and mention their uses:—(a) aluminium sulphate, (b) chrome alum, (c) ultramarine, (d) potassium perchlorate.
7. Write an essay on catalysis and its various applications.

CHEMISTRY—PASS

Examiners—	{	DR. DHIRENDRANATH CHAKRABARTI, Ph.D.
		MR. RABINDRANATH CHATTERJEE, M. Sc.
		.. ANANDAKISOR DAS, M.A.
		.. HARIDAS MOOKERJEE, M.A.
		DR. ANUKULCHANDRA SARKAR, M.A., Ph.D.
		MR. PRIYABRATA SARKAR, M.A.

FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

Not more than SIX questions should be attempted.

All questions carry equal marks.

1. Distinguish between decomposition and dissociation, giving examples of each. The vapour-density of phosphorus pentachloride was determined at 250° and was found to be 57.92. Calculate its degree of dissociation.

(P=31, Cl=35.5)

2. Write short explanatory notes on the following:—(a) Dulong and Petit's law, (b) Joule-Thomson effect, (c) atomic number.

3. Explain Le Bel and van't Hoff's theory of molecular configuration, and show how it accounts for the existence of the different varieties of tartaric acid.

4. Describe with the aid of a sketch the preparation of ordinary ether by Williamson's *continuous process*. Explain the various reactions that take place. How would you obtain a specimen of pure *dry* ether, and what are its chief uses?

5. Give a brief account of the methods used for the preparation and refining of glycerol on a large scale. What are its uses?

Describe a rational synthesis of citric acid from glycerol.

6. An organic liquid is shaken with caustic potash until the reaction is complete, when two organic substances may easily be isolated from this liquid. The first is of composition C, 77.8; H, 7.4; O, 14.8 per cent.; and on oxidation yields the original substance. The second substance is the sodium salt of an acid, and when heated with lime yields an aromatic hydrocarbon. Discuss these reactions.

7. Describe the preparation and properties of any *four* of the following substances:—(a) benzenediazonium chloride, (b) iodoform, (c) anhydrous formic acid, (d) ethyl nitrite, (e) benzoyl chloride, (f) diethyl malonate, (g) salicylic acid.

8. Mention precisely what happens when coal tar is subjected to fractional distillation. How would you isolate benzene, toluene, and phenol, from the crude distillate in a state of approximate purity? What impurity is usually present in coal tar benzene? How is it detected and removed?

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

Only six questions are to be attempted.

All questions are of equal value.

1. Name the different methods employed for the determination of the molecular weight of a substance. Discuss their relative usefulness, and describe the method you would employ for determining the molecular weight of a non-volatile non-electrolyte.

2. What are hydrates and hydroxides? Compare their physical and chemical properties. What evidence is there that hydrates are definite chemical compounds? How would you account for the fact that certain hydrates effloresce when exposed to air, while others do not?

A salt hydrate was found to contain 15.65 per cent of sodium, 16.54 per cent. of arsenic, 21.17 per cent. of sulphur, 3.54 per cent. of oxygen, and 43.10 per cent. of water. Find the simplest formula.

(Na=23, As=75, S=32.).

3. Write short notes on the following:—

- (a) Exothermic and endothermic compounds.
- (b) Slags and fluxes.
- (c) Glass, glazes, and enamels.

4. Give a short historical account of the discovery of argon. Describe its properties and discuss its position in the periodic table.

5. How would you prepare—(a) pure and dry NO (nitric oxide), (b) pure phosphorous acid, (c) chrome alum, and (d) potassium chlorate? Explain clearly the chemical reactions involved in each case.

6. Explain what happens when—

(a) sulphuretted hydrogen reacts with Cl_2 , Br_2 , and I_2 respectively in aqueous solution ;

(b) a solution of potassium iodide is added to a solution of copper sulphate ;

(c) a solution of potassium cyanide is added to a solution of copper sulphate ;

(d) SO_2 is passed into a solution of potassium iodate in sulphuric acid.

7. Name the different compounds formed by the elements manganese and iron, and give their formulae. Compare the properties of their corresponding compounds with special reference to those of oxides, halides, and sulphates.

8. Describe the Bessemer process of making steel from pig-iron, explaining the chemical reactions that occur. Give a neat pencil sketch of the furnace. How is the composition of the furnace-lining determined by that of the pig-iron used? Give reasons for your answer.

BOTANY

<i>Paper-setters— (Pass and Honours)</i>	{	PROF. S. P. AGHARKAR, M.A., PH.D.
		DR. SYED HEDAYETULLAH, M.Sc., PH.D.
		„ HARAPRASAD CHAUDHURI.
		PROF. S. R. KASYAP, B.A. (Cantab).
		„ SUBODHCHANDRA MAHALANOBIS, B.Sc., F.R.S.E.
		MR. P. PARIJA, M.A., I.E.S.

BOTANY—HONOURS

<i>Examiners— (Theoretical)</i>	{	PROF. S. P. AGHARKAR, M.A., PH.D.
		MR. SURENDRACHANDRA BANERJEE, M.A., B.Sc., F.I.S.
		DR. SAHAYRAM BOSE, PH.D.
		PROF. SUBODHCHANDRA MAHALANOBIS, B.Sc., F.R.S.E.

FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

Answer any FIVE questions.

All questions carry equal marks.

1. *Either*, Describe the floral structure in the family Orchidaceae, and give the geographical distribution of the family.

Or, Describe the chief characters of the family Cactaceae, giving the geographical distribution. Are any members of the family naturalized in India? If so, which and where?

2. *Either*, Discuss the relative claims of the Amentiferae and the Ranales to be regarded as primitive dicotyledons.

Or, Discuss the origin of the herbaceous habit in the angiosperms.

3. Discuss the position of *either* the Euphorbiaceae *or* the Ficoideae among the dicotyledons.

4. Write short morphological notes on any *five* of the following:—Podostemaceae, Lemnaceae, Orobanchaceae, Rafflesia, Artocarpus, Umbelliferae, Piperaceae.

5. Discuss the factors which have led to the dominance of the Compositae.

6. *Either*, Name the chief fibre-yielding plants of India and describe briefly the method of obtaining the fibre. Refer them to their families.

Or, Describe the general features and the floristic composition of the vegetation of any particular area which you may have studied.

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Answer FIVE questions only, attempting not more than TWO from any one section.

SECTION I

1. Giving short illustrative sketches, point out the distinguishing characters of the following:—Oscillatoria, Lyngbya, Anabaena, and Rivularia. Also mention the general characters peculiar to the family to which they belong. 20

2. Discuss the affinities of the Charales, and briefly describe with the help of neat sketches the life-history of any one member of this group. 20

3. Mention the common methods of perennation in the green algae, with special reference to Bengal genera, and describe in detail the life-history of Oedogonium. Give neat drawings. 20

4. Describe the general structural features and the life-history of any brown or red alga showing alternation of generations and compare the type you select from the point of view of alternation of generations with Coleochaete. 20

SECTION II

5. Write a short note on 'Sexuality in Fungi', with special reference to the rust fungi.

6. Describe the life-history of any smut fungus that you have studied, pointing out the features of morphological and physiological interest. 20

7. Describe in detail the methods of reproduction in *Pteronosporaceae*, giving illustrative sketches. 20

SECTION III

8. 'The Bryophytes are usually considered to be a relatively unspecialized group of plants.' Critically discuss this statement. 20

9. Write short descriptive notes on the following genera:—*Anthoceros*, *Sphagnum*, and *Polytrichum*. Give labelled drawings to illustrate their structures. 20

10. Give a classification of the Anacrogynous Jungermanniales. Cite examples from Indian genera and mention their characters briefly. Illustrate your answer with neat drawings. 20

THIRD PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Answer FIVE questions only.

1. Describe the part enzymes play in the translocation, storage, and utilization of reserve food substances. 20
2. Give a brief account of plant life in the absence of oxygen. 20
3. Describe the ecological features of the epiphytes in a subtropical forest. 20
4. How far do stomata influence transpiration? 20
5. What part does tropism play in the phenomenon of growth? 20
6. Explain what you understand by selective absorption by the root, and the part played by this in the distribution of plants. 20
7. Explain clearly the various kinds of turgor movements in plants. 20

FOURTH PAPER

Candidates are required to give their answers in their own words as far as practicable.

Answer any FIVE questions. Illustrate your answers by neat sketches wherever necessary.

All questions carry equal marks.

1. Write a short essay on Mendelism.
2. Assign the following to their systematic position and sketch their diagnostic characters:—*Salvinia*, *Rhynia*, *Sigillaria*, *Psilotum*, *Sphenophyllum*.

3. Discuss briefly the present position of the mutation theory.
4. Describe the life-history of *Selaginella* and indicate the affinities of that genus.
5. Write a short illustrated account of the Indian *Pteridospermae* and indicate their distribution in the country.
6. Describe the general characters of *Gnetum* and enumerate its Indian species. Indicate its affinities to the other members of the family.
7. Discuss briefly the morphology of the female cone of the *Coniferae*.
8. Summarize the views held regarding the origin of the gymnosperms.

BOTANY—PASS

Examiners— {

 MR. KALIPADA BISWAS, M.Sc.
 „ ANUTOSH DASGUPTA, M.A.
 SRIMATI SAROJINI DATTA, M.A.
 MR. GIRIJAPRASANNA MAJUMDAR, M.Sc.

FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. *Either*, Describe briefly with neat sketches the morphological features of the root system, leaves, inflorescences, flowers, and fruits of a rice plant. What are the chief agronomical classes of rice grown in Bengal? State briefly the methods of their cultivation. 20
Or, Give the main characters of the family of *Cucurbitaceae*, and indicate in what respect it is an important family in economic botany.
2. *Either*, Elucidate your ideas about species and genus in the classification of plants. 20
Or, Give a comprehensive account of the principles of nomenclature of plants in systematic botany.
3. Give a brief account of the morphology and life-history of a *Cycas*. State how its gametophyte differs from those of other gymnosperms. 20
4. What are the vascular elements of angiosperms? Illustrate your answer with neat sketches. Give a comparative account of the vascular system of dicotyledons and monocotyledons. 20
5. *Either*, What is metamorphosis? Explain fully the statement—
 'A flower is a bud or shoot metamorphosed for the purpose of reproduction.' 20
Or, Describe with neat sketches the structures of different kinds of ovules.

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

Answer only FIVE questions.

The questions are of equal value.

1. Give an account of the influence of the alternation of day and night and of winter and summer on the feeding processes in plants.
2. Describe in detail the differences between Vaucheria and Spirogyra as regards their structure and reproduction.
3. How does circulation of sap go on in a plant? Describe the channels through which it takes place.
4. Trace the life-history of Chara. How does Ulothrix differ from Peronospora?
5. Give an account of the processes of gas-interchange that take place between green plants and the atmosphere. Point out the significance of these processes to the plant and their effect upon the atmosphere.
6. Compare the gametophyte of a Moss with that of a Fern as regards morphological features and reproduction.
7. What is tropism? Give an account of tropic movements of plants.

PHYSIOLOGY

DR. GIRINDRASEKHAR BOSE, D.Sc., M.B.
 RAI BAHADUR DR. U. N. BRAHMACHARI, M.A.,
 M.D., Ph.D., F.A.S.B.
 PROF. SUBODHCHANDRA MAHALANOBIS, B.Sc., F.R.S.E.
 DR. RUDRENDRAKUMAR PAL, M.B., D.Sc., M.R.C.P.
 (Prince of Wales Medical College, Patna).
 „ BIJALIBIHARI SARKAR, D.Sc.
 SIR NILRATAN SIRCAR, Kt., M.A., M.D., LL.D. D.C.L.

*Paper-setters—
 (Pass and
 Honours)*

PHYSIOLOGY—HONOURS

MR. NARENDRA MOHAN BASU, M.Sc.
 „ NIBARANCHANDRA BHATTACHARYA, M.A.
 PROF. SUBODHCHANDRA MAHALANOBIS, B.Sc. F.R.S.E.
 DR. BIJALIBIHARI SARKAR, D.Sc.

*Examiners—
 (Theoretical)*

FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

Four questions are to be attempted.

All the questions carry an equal number of marks.

1. Discuss the experiments and observations leading to the conclusion that the splenic pulp forms a 'reservoir' for holding red corpuscles in

order to meet occasional additional demands for haemoglobin in the circulation.

2. Discuss Gaskell's suggestion that the vagus produces a state of anabolism in a reverse effect to that of ordinary motor nerves; and explain the hypothesis of a possible liberation in the cardiac muscles of a 'vagus substance' which is responsible for the inhibitory action of the vagus nerve.

3. Give a detailed account of the origin and development of the (a) Granulocytes, (b) Lymphocytes, (c) Merocytes.

4. Discuss the causes of the three different types of anoxaemia, showing the different ways in which the tissues are affected in each case.

5. What are the grounds for concluding that capillaries are capable of altering their calibre independently of the arterioles and venules?

Mention the factors that maintain the tone of the capillaries.

What are the reasons for concluding that a substance having a histamine-like action ('H substance') or histamine itself is liberated in the skin when it is injured?

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

Not more than FOUR questions are to be attempted.

The questions are of equal value.

1. Discuss what you know about intestinal movement and sensation.
2. Discuss the mechanism of the regulation of the temperature of the human body.
3. Write what you know about cutaneous sensations.
4. Discuss the effects of extirpation of the liver in the dog.
5. Discuss the way in which the acid-base equilibrium of the body is affected by the excess of the different proximate principles in food.

THIRD PAPER

Candidates are required to give their answers in their own words as far as practicable.

Answer only FOUR questions.

The questions are of equal value.

1. Give the structure of an actively secreting pituitary gland. What is the modern conception about the functions of different parts of the gland?
2. Discuss the role of various endocrine organs in relation to carbohydrate metabolism.

3. Write an essay on basal metabolism.
 4. Discuss the modern theories of muscles contraction.
 5. What is electro-tonus? Explain Pfluger's law of contraction.
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FOURTH PAPER

Candidates are required to give their answers in their own words as far as practicable.

Answer only FOUR questions.

The questions are of equal value.

1. What are kinaesthetic impulses? Trace their origin, course, and destination.
 2. Describe the *nature* of movements induced by stimulation of the cortical motor centres of the cerebrum.
 3. Describe the principal connexions of the optic tracts and their respective functions.
 4. Trace the spino-thalamo-cortical pathway for sensations of touch; temperature, and pain.
 5. Describe the structure and function of the organ of Corti.
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PHYSIOLOGY—PASS

<i>Examiners—</i>	}	MR. MANMATHANATH BANERJEE, M.Sc.
		„ SAURINDRAMOHAN BANERJEE, M.Sc. M.B.
		„ PHANINDRANATH BRAHMACHARI, M.Sc. M.B.
		„ S. K. SEN, M.Sc. M.B., D.P.H.

FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

Answer any FIVE questions.

All questions carry equal marks.

1. Give a brief account of the different factors involved in the coagulation of blood when it is taken out of the body.
2. Describe the sequence of events in the cardiac cycle, with special reference to the structures concerned in their initiation and maintenance.
3. Give an account of the chemical regulation of the respiratory movements.

4. How is the exchange of gases in the lungs effected?
 5. Describe the functions of the glomeruli of the kidney.
 6. What are the factors that determine the excretion of water by the skin? What is the chemical composition of sweat?
 7. Write short notes on:—(a) phagocytosis, (b) cerebral circulation, (c) intrathoracic pressure, (d) tidal air, and (e) uric acid.
-

SECOND PAPER

Candidates are required to give their answers in their own own words as far as practicable.

The questions are of equal value.

Only FIVE questions are to be attempted.

1. Give a brief account of the changes which take place in a nerve during activity.
 2. What is the composition of gastric juice? Describe the mechanism by which it is secreted when food is taken.
 3. Give a detailed description of the internal ear.
 4. Write what you know about the structure and functions of the parathyroid glands.
 5. Give an account of the digestion of protein in the alimentary canal. What is the fate of the amino-acids after they are absorbed in the system?
 6. Write what you know about the properties and characteristics of reflex arcs.
 7. Write short notes on:—(a) rigor mortis, (b) the bile pigments, (c) colour blindness, (c) secretion.
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GEOLOGY AND MINERALOGY

<i>Paper-setters—</i> <i>(Pass and</i> <i>Honours)</i>	{	MR. SARATLAL BISWAS, M.A. DR. CYRIL S. FOX, D.Sc. PROF. K. K. MATHUR, B.Sc. MR. D. N. WADIA, M.A., B.Sc., F.G.S., F.R.G.S.
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GEOLOGY—HONOURS

<i>Examiners—</i> <i>(Theoretical)</i>	{	MR. SARATLAL BISWAS, M.A. MR. SATYACHARAN CHATTERJEE, M.Sc. DR. M. S. KRISHNAN, M.A., Ph.D., A.R.C.S. DR. MANMOHAN CHATTERJEE, B.Sc. Ph.D., A.R.C.S., D.I.C.
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FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Answer FIVE questions—at least two from each group.

GROUP A

1. Give an account of the modes of occurrence, origin, and manufacture of common salt in India. 20
2. Define the term 'lode'. How is 'comb structure' developed in a lode? Describe, by neat diagrams, the following types of lodes:—simple lode, wavy lode, ladder lode, and saddle lode. 20
3. Give an account of the nature, origin, and uses of laterite. 20
4. *Either*, Describe the deposit of a useful mineral which you have personally examined. 20
- Or*, Describe the nature of the deposits of gold, mica, and diamond in India.

GROUP B

5. Write short notes on:—isostasy, geysers, rejuvenation of rivers, and continental shelf. 20
6. Give an account of the characteristic features of the different types of mountains. How do they originate? Describe the mountains of India and adjacent countries to illustrate your answer. 20
7. Discuss the nature and origin of (a) loess, and (b) Rajputana desert. 20
8. Write an essay on glaciers. 20

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Answer FIVE questions only.

1. Write notes on the occurrence, chemical characters, and physical properties of—cassiterite, kyanite, cancrinite, staurolite, and cryolite. 20
2. Explain *one* of the following:— 20
 - (a) Use of the gypsum plate in optical investigations.
 - (b) Changes in the appearance of the biaxial interference figure when the crossed nicols are rotated together.
3. Describe the crystal habits of gypsum and pyrite. Draw neat sketches of the common crystal forms and name the crystal faces in Miller's notation. 20
4. Describe the common alterations which the essential minerals constituting olivine-gabbro undergo. 20
5. Explain the principle of saturation, over-saturation, and under-saturation in igneous rocks. Do quartz and olivine occur together as primary minerals? If so, under what circumstances? 20
6. Describe the following rock-types:—essexite, anorthosite, phonolite, phyllite, and hornfel. 20
7. Comment on the following rock-features with reference to their bearing on the origin of the stratified rocks in which they occur:— 20
 - (a) Overlap and overstep.
 - (b) Occurrence of undecomposed felspar in a grit.
 - (c) Presence of silt along with pebbles and boulders in the rock-mass.

THIRD PAPER

Candidates are required to give their answers in their own words as far as practicable.

Any FIVE questions out of these carry full marks.

1. Give the stratigraphic horizon and range of the following genera, noting in each case the exact systematic position of the fossil:—*Redlichia*, *Orbitolina*, *Anthracoherium*, *Didymograptus*, *Radioites*, *Neuropteris*, *Turridites*, *Turritella*, *Phillipsia*, *Voltzia*.
2. Give an account of the principles on which the *Brachiopoda* have been classified. Name some leading genera of Brachiopods from each of the Palaeozoic systems of *either* India *or* Burma and refer them to their systematic position.
3. In a valley in the Central Himalaya, the following section is exposed, the beds being tabulated in descending order:—
 - (1) Shales with *Marginifera himalayensis*.
 - (2) Brown limestone with *Otoceras* and *Ophiceras*.

- (3) Thin bedded limestone with *Hedenstroemia*.
- (4) Limestones with *Ptychites*.

Base hidden under *scree detritus*.

Although the section is composed of almost horizontal strata there is visible considerable tectonic disturbance in the adjoining mountains. Explain this section and give the correct order of superposition.

4. How would you distinguish between—*Pentacrinus* and *Cyathocrinus*, *Gangamopteris* and *Glossopteris*, *Orthis* and *Chonetis*, *Daonella* and *Monotis*, *Micraster* and *Hemiaster*?

5. Give the geological range of each of the genera in the previous question.

6. Give an account of the evolution of the Mammalian molar tooth.

7. Carefully explain the following terms:—ontogeny, spondylium, madreporite, orthogenesis, megaspheric forms, aptychus, convergent evolution, heterochthonous types.

8. Write a note on the history of the genera (a) *Elephas*, and (b) *Parkinsonia*.

FOURTH PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Only FIVE questions to be answered.

1. Give the geological horizon and palaeontological division of the following fossils:—*Swapethicus indicus*, *Ostrea multicostata*, *Nummulites granulosa*, *Baculites vagina*, *Trigonia smeci*, *Belemnites sulcatus*, *Gondwanosaurus bijoriensis*, *Gangamopteris cyclopteroides*, *Syringothyris cuspidata*, and *Pentamerus oblongus*. 20

2. State the geological age of, and name the most characteristic fossil found in the following formations:—Laki series, Utatur stage, Chari series, Spiti shales, Ceratites beds, Maleri stage, Panchet series, Umaria (marine) beds, Lipak series, and Neobolus (Kussak) beds. 20

3. Give a short historical sketch of the evolution of the Bay of Bengal since the Mesozoic era. State specially the evidence available in Jurassic times; at the close of the Cretaceous period; in the Eocene epoch, and in Miocene times. 20

4. Discuss briefly the tertiary succession in Burma, making particular distinction between marine and freshwater formations. Place data in tabular form, if possible. 20

5. Discuss the formations met with along the scarp of the Punjab Salt Range, and trace the stratigraphical changes as the strata are followed from east to west. 20

6. Discuss the general distribution, geological age, and mode of formation of the Siwalik system and its equivalents in India (but excluding Burma). 20

7. State the geological age, both upper and lower limits, of the Deccan traps, and explain fully the data which have been used to fix the period of these basaltic eruptions (in the Peninsula). 20

GEOLOGY—PASS

Examiners— { DR. P. K. GHOSH, D.Sc.
MR. BHUPENDRANATH MAITRA, M.A.

FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Answer SIX questions only.

1. Explain clearly the modes of formation of—(a) stalactites and stalagmites, (b) coal. 16
2. How would you distinguish in the field between igneous and sedimentary rock formations? 16
3. Write notes on—khondalite, charnockite, gneiss, pegmatite, dolerite, syenite, obsidian, and aplite. 20
4. Give an account of the various textures of igneous rocks. 16
5. Indicate the uses of—marble, kaolin, diamond, gold, and muscovite. Name localities in India which form the chief sources of their supply. 16
6. What do you understand by—plane of symmetry, axes of symmetry, and centre of symmetry? Explain, by a diagram, the nature of symmetry in the normal group of tetragonal crystals. 16
7. Describe the chemical compositions and the distinctive characters of the chief minerals comprising the felspar group and the feldspathoids. 16
8. Explain the following:—isomorphism, axial ratio, pleochroism, optic axis, and polarizer. 16

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

Any SIX questions out of these carry full marks.

1. Give an account of the chemical activity of underground water and the geological changes brought about by it.
2. Classify the various kinds of earth-movements, and explain the relationship of earth-movements to vulcanicity.
3. Define the terms:—epicentre, rejuvenation of rivers, fan-structure, bhangar, isoseist, hanging valley, fumaroles, erratics.
4. In a diagrammatic section, illustrate the different modes of occurrence of igneous rocks among the stratified rocks of the earth's crust.
5. Describe the petrology and distribution of the Dharwar system of rocks in India. What are the economic minerals associated with it?

6. Arrange the following series and stages according to their proper stratigraphic horizon:—Bagh beds, Ceratite beds, Neobolus shales, Rajmahal series, Ranikot series, Sripermatour beds, Malani series, Kasauli series. Name the principal rock and fossil contents of each.

7. Describe, with sketches, the structure and organization of the Echinoidea. Name some fossil echinoids of India.

8. Name some of the characteristic fossils occurring in—(a) the Lower Gondwana coal-fields, (b) the Siwalik system, (c) the cretaceous of South India.

ZOOLOGY

<i>Paper-settlers— (Pass and Honours)</i>	DR. KARAMNARAIAN BAHL, D.Sc.
	„ DAKSHINARANJAN BHATTACHARYA, M.A., Ph.D.
	„ EKENDRANATH GHOSH, M.Sc. M.D., F.Z.S.
	„ S. L. HORA, D.Sc.
	„ GEORGE MATHAI, Sc.D.
	„ H. S. PRUTHI, D.Sc.

ZOOLOGY—HONOURS

<i>Examiners— (Theoretical)</i>	}	DR. BAINI PRASAD, D.Sc.
		„ EKENDRANATH GHOSH, M.Sc., M.D., F.L.S.
		„ HIMADRIKUMAR MOOKERJEE, D.Sc.
		„ HARENDRANATH RAY, M.Sc., Ph.D.

FIRST PAPER

The figures in the margin indicate full marks.

Not more than FOUR questions are to be attempted.

1. Explain the physiology of movement in the *Protozoa*. 25
2. Compare and contrast the organization of *Fæna* with that of *Polygordius*. 25
3. Discuss the adaptation of Sponges to their environment. 25
4. Give an account of the visual organs in the *Mollusca*. 25
5. Discuss the probable origin of the *Insecta*. 25
6. Give a comparative account of the alimentary canal in the *Echinodermata*. 25

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

Only FOUR questions are to be attempted.

All questions carry equal marks.

Illustrate your answers with neat diagrams.

1. Characterize the phylum *Chordata*, and give the principal distinguishing features of its *three* main subdivisions.
 2. Comment upon the statement: 'The Dipnoi are a very ancient race.' Indicate briefly the environmental conditions which are supposed to have induced the evolution of this group of fishes.
 3. Describe in detail the course of circulation of blood in the heart of the frog, and explain the utility of the various structures concerned in this process.
 4. On what characters are the classes *Reptilia* and *Aves* associated together under the title of *Sauropsida*? What is meant by the term *Amniota*?
 5. Explain carefully the nature of the structural modifications that are found in aquatic mammals, and show how these modifications are correlated with aquatic life.
 6. Write short notes on any *five* of the following:—(a) *Ungulata*, (b) *Archaeornithes*, (c) *Rhynchocephala*, (d) *Stegocephala*, (e) *Holocephali*, (f) *Myxinoidei*, (g) *Larvacea*.
-

THIRD PAPER

Candidates are required to give their answers in their own words as far as practicable.

Only FOUR questions are to be attempted.

All questions carry equal marks.

1. Define and explain the phenomenon of *Paedogenesis*, giving examples.
 2. Describe briefly the results obtained regarding the structure of an animal cell by the process of micro-dissection.
 3. What do you understand by Morgan's '*Gene*'? Explain its significance in the inheritance of characters.
 4. What bearing has the geographical distribution of animals on the origin of new races, varieties, or species?
 5. What structures will have developed in a chick embryo after thirty-six hours of incubation? Illustrate your answer with neat sketches.
 6. Write a short essay on the Inheritance of Acquired Characters.
-

FOURTH PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Illustrate your answer by drawings as far as possible.

Write an essay on any *one* of the following subjects:—

100

- (a) Mendel's Law and its bearing on the origin of species.
- (b) The origin of parasitism in the animal kingdom.
- (c) Migration of birds.
- (d) Bionomics of estuarine animals.

ZOOLOGY—PASS

Examiners— { MR. DURGADAS MUKHERJEE, M.Sc.
 .. TARAKNATH PODDAR, M.Sc., M.B.

FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

Not more than FIVE questions to be attempted.

All questions carry equal marks.

Illustrate your answers with diagrams.

1. Describe the different modes of reproduction met with in the phylum *Protozoa*. Illustrate your answer with concrete examples.
2. Describe the structure and method of reproduction of a *Siphonophore*.
3. Describe in detail the life-history of *Distomum hepaticum*.
4. Describe the different forms of *Nephridia* met with in the different groups of *Annulata*.
5. Describe briefly the anatomy of *Peripatus* and discuss the relationships of the class *Onychophora*.
6. Describe the different types of mouth-parts met with in the class *Insecta*.
7. Write short notes on:—*Apophyle*, *Temnocephala*, *Pilidia*, *Pluteus*, *Sagitta*, *Antennule*.

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

Not more than FIVE questions are to be attempted.

All questions carry equal marks.

1. Give an illustrated account of the excretory organs of *Amphioxus*, showing clearly their relations to the coelom and the atrium.
 2. Describe the male urinogenital organs of the shark you have dissected and compare them with those of the frog.
 3. Compare the pectoral girdle in a dogfish, a bony fish, and a reptile.
 4. Give an illustrated account of the brain of a mammal, and indicate in what respects it shows an advance over that of a frog.
 5. Write a paragraph on the systematic position and distinctive features of the following:—*Hippocampus*, *Archaeopteryx*, *Echidna*, *Rhea*.
 6. *Either*, Discuss the palaeontological evidence in favour of the theory of organic evolution.
Or, Write a short essay on Mimicry.
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EXPERIMENTAL PSYCHOLOGY

<i>Paper-setters— (Honours and Pass)</i>	{	MR. HARIDAS BHATTACHARYYA, M.A. DR. GIRINDRASEKHAR BOSE, D.Sc., M.B. MAJOR J. E. DHUNJIBHOY, M.B., B.Sc., I.M.S. MR. BIMALCHANDRA GHOSH, M.A., M.B., B.C. PROF. S. C. MAHALANOBIS, B.Sc., F.R.S.E. DR. N. N. SENGUPTA, M.A., Ph.D.
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EXPERIMENTAL PSYCHOLOGY—HONOURS

<i>Examiners—</i>	{	DR. GIRINDRASEKHAR BOSE, M.B., D.Sc. MAJOR J. E. DHUNJIBHOY, M.B., B.Sc. I.M.S. PROF. S. C. MAHALANOBIS, B.Sc., F.R.S.E. MR. HARIPADA MAITI, M.A.
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FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

Answer any SIX questions.

The questions are of equal value.

1. Discuss the role of heredity and environment in individual development.
2. Consider the distinction between learning and maturation with illustrations from childhood and youth.

3. State and discuss, briefly the theories of space-perception.
 4. Write short notes on:—sensory adaptation, fatigue, perseveration, and distraction.
 5. Give an account of affective consciousness, reviewing the genesis of its affective elements.
 6. Analyse belief. What cognitive processes remove doubt and establish belief?
 7. Give an account of Hormetic and Gestalt Schools of Psychology.
 8. Write a short account of the contributions of Lotze, Bain, Darwin, and Galton.
-

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

Answer only FOUR questions.

The questions are of equal value.

1. Discuss the role of motor processes in space-perception.
 2. What is memory? Discuss the function of brain-tissue in the process of reinstatement of ideas.
 3. Expound what is meant by 'hereditary reflexes', and illustrate your answer by observations on the behaviour of very young animals.
 4. Describe the receptor of olfactory sense. Discuss the importance of data from this source in the organization of sense-experience in animals.
 5. What is a synapse? How is the reaction time of conscious processes influenced by synapses?
 6. Expound and illustrate the principle of 'final common path' in nervous co-ordination.
-

THIRD PAPER

Candidates are required to give their answers in their own words as far as practicable.

Answer FIVE questions only.

The questions are of equal value.

1. Write a short essay on Monocular Space.
2. Explain the following experimental phenomena:—flicker, beat, oscillation of attention.
3. Briefly outline some of the leading experiments on mental fatigue.
4. Enunciate and illustrate the Method of Mean Error.

5. How are feelings studied in a laboratory? Do experiments on feeling support Herbert Spencer's equation of pleasure and increased vitality?

6. Indicate the influence of attitude and expectation on experimental results. Give concrete examples.

7. *Either*, What is a Free Association Test? To what uses has it been put in recent times?

Or, Discuss the possibility of using mental tests for vocational guidance and vocational selection.

8. Discuss the necessity and utility of a time-recording apparatus in experiments on higher mental processes by reference to concrete examples.

9. Describe an experiment on the span of attention with a tachistoscope.

Explain the function of each part of the instrument, and give a diagram, if possible.

FOURTH PAPER

Candidates are required to give their answers in their own words as far as practicable.

Answer any six questions.

The questions are of equal value.

1. What are the possible sources of error in a psychological experiment, and what precautions will you take to guard against such errors?

2. Discuss briefly the relative merits of the three psycho-physical methods.

3. What are beats, intermediate tones, and combinational tones? How are they produced?

4. What are liminal and terminal stimuli? How can they be determined with reference to pitch?

5. What is retinal rivalry? How would you experimentally investigate this phenomenon? Discuss briefly the theory and significance of retinal rivalry.

6. Can emotions be measured? If so, how? If not, why not?

7. Plan an experiment to study the different aspects of habit formation. What results would you expect?

8. Define—(a) time error, (b) adaptation, (c) practice, (d) ready signal, and (e) spurt.

EXPERIMENTAL PSYCHOLOGY—PASS

Examiners— { MR. HARIDAS BHATTACHARYYA, M.A.
DR. SUHRITCHANDRA MITRA, M.A., PH.D.

FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

Only FIVE questions to be answered.

All questions carry equal marks.

1. Discuss the following:—ideational types, eidetic imagery, tied images, and synaesthesia.
2. 'Seeing a thing as solid is half-way house between seeing it as one and seeing it as two.' Discuss and illustrate by a diagram.
3. What is Weber's law? How did Fechner modify it? What are the objections to Fechner's law?
4. Discuss the relative importance of the factors which lead to the revival of past experiences.
5. State the principal facts, verifiable by experiments, concerning the nature of attention.
6. What are the criteria of 'intelligence'? What do you understand by the terms 'growth of intelligence', and 'subnormality of intelligence'?
7. Discuss 'in what ways activity after learning differs from activity before learning' (WOODWORTH).
8. Discuss how far thinking can be interpreted as controlled association.

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

Answer any SIX questions.

All questions carry equal marks.

1. What are after-images? Discuss the theories that have been put forward to explain the origin of visual after-images.
2. Classify cutaneous sensations and mention their peculiarities and the sense organs concerned in each.
3. What is range of attention? How would you determine it?
4. Describe the principle of the stereoscope.
5. Write a short essay on adaptation.
6. What is a just noticeable difference and how would you utilize it as the unit of mental measurement?
7. Describe the general principles that should guide a psychological experiment.
8. Write short notes on:—(a) sensory reaction time, (b) time error, (c) introspection, (d) local sign, (e) combinational tone, and (f) the self.

ANTHROPOLOGY

Paper-setters and Examiners— (Pass and Honours) (THEORETICAL)	{	DR. BIRAJSAKAR GUHA, M.A., PH.D. RAO BAHADUR L. K. ANANTAKRISHNA IYER, B.A., L.T. DR. PANCHANAN MIRTHA, M.A., PH.D. RAI SARATCHANDRA RAY BAHADUR, M.A., B.L., M.L.C. DR. ANATHNATH CHATTERJEE, M.B., B.S.
		(Paper-setter only).

ANTHROPOLOGY—HONOURS

FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

Only FOUR questions are to be answered.

All the questions are of equal value.

1. Write a dissertation on any *one* of the following subjects:—
 - (a) Man's place among the mammals.
 - (b) The coming of man—how, when, and where.
2. Briefly review the evolution of art during the upper palaeolithic periods of Europe.
3. *Either*, Mention the anatomical peculiarities of the Neanderthal type of man.
Or, Survey the structural features of 'Eoanthropus'.
4. Describe the types of men who inhabited Europe during the later palaeolithic periods.
5. Discuss the importance of the Broken Hill finds.

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

Answer any FIVE questions

All questions carry equal marks.

1. Discuss how far the racial history of Asia has been affected by the discoveries of the remains of Early Man in China and Palestine.
2. What do you know of the race or races connected with the Indus Valley civilization? With what other race or races would you trace their affinities?
3. Who were the Tasmanians, and how were they racially connected with the other races of Oceania?
4. Discuss the somatic characters of the Dinka and the Massai and the racial kinship of the Nilotics with the other negroes of Africa.
5. Do you consider the Red Indians of America racially homogeneous? If you think so, what are your reasons?

6. What do you understand by 'Nordic race'? Is the expression desirable from the anthropological standpoint? Discuss the question.

7. Explain what is meant by the 'Armenoid' race. How is it distributed?

THIRD PAPER

Candidates are required to give their answers in their own words as far as practicable.

*The figures in the margin indicate full marks.
Answer any FIVE questions.*

1. What evidence is there for continuity between periods into which the prehistoric age has been divided? By what criteria would you distinguish a palaeolithic from a neolithic celt? 20

2. Examine the arguments for and against the belief in the authenticity of 'eoliths'. 20

3. Compare and contrast the characteristic implements of the Mousterian period with those of the Acheulian and Aurignacian periods. 20

4. State what you know about the origin and distribution of tattooing. What motives are assigned by the various peoples for the prevalence of this custom? 20

5. How would you differentiate between basket-work, mat-weaving, and loom-weaving? 20

6. Discuss the various theories of the origin of clothing. 20

7. Give an account of the more primitive means of transport by water in India. 20

FOURTH PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. *Either*, Write notes on and describe the inter-relations, if any, between the following:—(a) animism, (b) animatism, (c) fetishism, (d) shamanism, and (e) polytheism. 40

Or, State and discuss the different theories of the origin and growth of religion.

2. *Either*, Write an essay on the position of women in primitive society. 25

Or, Give an account of the origin and development of the ideas of property and inheritance in primitive society.

3. Write an essay on the Classificatory System and the Dual Organization, illustrating your paper by Indian examples as far as possible. 35

ANTHROPOLOGY—PASS

FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

Answer any FIVE questions.

All questions carry equal marks.

1. How would you explain the evolution of man? Is the argument of the 'missing link' biologically sound?
2. What explanation would you offer for the differences in skin colour among different races of men?
3. What part has the topography of India played in her racial history?
4. To what extent is Europe racially connected with Asia and Africa?
5. How would you account for the presence of Negritoes in Asia? Are the Oceanic Negritoes connected with those of Africa?
6. What do you understand by the Mongolian race? How is it differentiated from (a) Alpine, (b) Mediterranean races?
7. What do you understand by the word 'Dravidian'? Is it correct to use the term in the racial sense? What are your reasons if you do not think so?
8. Write short ethnological notes on:—(a) the Khasis, (b) the Kadars, (c) the Nicobarese, (d) the Lepchas, (e) the Mundas.

SECOND PAPER

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Answer any FIVE questions.

1. What are the characteristics of the culture of the 'cave men' of the upper paleolithic age? 20
2. Discuss the term 'beaker folk'. State what you know about their migration to Europe. 20
3. How far are the hunting, pastoral, and agricultural conditions progressive stages in the general advancement of culture. 20
4. Briefly describe and classify the chief methods of agriculture, with special reference to climatic conditions. 20
5. State what you know about cross-cousin marriage and its distribution. 20
6. What light do burial customs throw on savage ideas about the relations between the living and the dead? 20
7. What purposes do personal ornaments serve, other than that of mere decoration? Give instances as far as possible. 20

B. Com. Examination

1934

BENGALI COMPOSITION

Examiner—RAI BAHADUR TARAKNATH SADHU, B.L.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Give the Bengali equivalents for *any five* of the following expressions:— 10

(a) Power of Attorney ; (b) Articles of Association of a Company ;
(c) Agreement of Partnership ; (d) Insolvent ; (e) Life Assurance ; (f) Bill of Lading ; (g) Import Tariff.

2. Write an essay in Bengali on *one* of the following subjects:— 30

- (a) The State in relation to Indian Industries.
- (b) Road and Railway competition in India.
- (c) Middle-class Unemployment in Bengal.

3. Translate *any two* of the following passages into Bengali:—

(a) In the first place, the town may want earthen vessels as well as the village, and the potter may not have enough to supply everyone. He will naturally sell what he has to his old customers in the village ; but some of the townspeople will offer him a higher price, and he will take this from them, unless the villagers also are willing to pay a higher price. Thus the increase in the demand breaks up what has become the old village custom and the potter gets a higher price. 20

(b) The use of kerosine oil in Northern India is comparatively recent ; formerly light was obtained universally, as it still is in many villages, by burning one of the oils produced from seeds grown locally. When kerosine oil first came into use, it was sent up-country packed in tins and the tins placed in boxes, just as the better qualities of oil are still transported. This method of packing is expensive and the cost of carrying the oil so packed by rail is considerable. 20

(c) By the term supply of labour is meant, not the number of persons qualified to do the work but the number of qualified persons willing to do the work at a particular rate of wages. The number able to do the work is only the extreme limit of supply. Thus, as with commodities, supply cannot be considered apart from price. In the long run, too, it may be said that the supply of labour varies with the price that can be obtained for its services. If the wage offered fall below a certain amount, there might be no supply at all. 20

4. Translate the following passage into English:—

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অৰ্থ অতিশয় প্ৰয়োজনীয় জৰুৰী। অৰ্থেৰ ব্যবহার আছে বলিয়া যখন যে সামগ্ৰীৰ প্ৰয়োজন হয়, অৰ্থ দ্বাৰা আমৰা তৎক্ষণাত তাহা পাইতে পাৰি। যাহাৰ এক বস্তা ধান আছে, সে প্ৰয়োজন হইলে উহাৰ কিয়দংশ বিক্ৰয় কৰিয়া টাকা পাইতে পাৰে এবং ঐ টাকা দ্বাৰা যাহা ইচ্ছা ক্ৰয় কৰিতে পাৰে। কিন্তু যদি অৰ্থেৰ ব্যবহার প্ৰচলিত না থাকিত, তাহা হইলে আবশ্যক সামগ্ৰীৰ অভাব মোচন কৰিবাব জন্তু আমাদিগকে অনেক ক্লেশ ও অস্থবিধা সহ কৰিতে হইত।

ASSAMESE COMPOSITION

Examiner—MR. SURYYAKUMAR BHUIYAN, M.A.

The figures in the margin indicate full marks.

1. Translate any two of the following passages into Assamese:—

(a) A certain man had two sons: and the younger of them said to his father,—‘Father, give me the portion of property that falls to my share’. And the father divided unto his sons his property. Not many days after the younger son gathered all together, and took his journey into a distant country, and there wasted his wealth with riotous living. And when he had spent all, there arose a mighty famine in that land; and he began to be in want. And he went and procured employment under a citizen of that country, and his master sent him unto the fields to feed swine. He would have been glad to fill his belly with the husks that the swine did eat; and even that no man gave unto him. And when he came to himself he said,—‘How many hired servants of my father have bread enough and to spare, and I perish with hunger!’ 15

(b) Years ago Assamese women of good families were supposed to wear nothing but silk. To wear cotton was nothing less than a disgrace. I have heard that twenty-five years ago they wore blouses costing fifty to a hundred rupees. To-day a girl would not dare to wear a blouse costing half that amount. The girls of to-day like simplicity in dress. I know several girls who spin their own cotton and then weave it, make a blouse of it, and wear it. When they wear the work of their own hands their satisfaction shines in their faces. In the old days women never had the same sort of joy in their expensive blouses as the girl of to-day has in her hand-woven cotton one. I tried to persuade a girl to wear a silk blouse the other day, and she began to cry, saying that she did not think it nice in this day and age to wear silk for common dress. 15

(c) My father was a Brahman priest of high distinction and I was his only daughter. It is our religious custom to marry girls when

very young, and so my father made arrangements for my marriage when I was thirteen years old. I did not know the man to whom I was engaged. I saw him for the first time on my wedding-day. After my marriage I remained with my mother for a whole year, and then I went to my husband's home. I did not like my husband at first because I was a little girl, and I did not know him. He was just a strange man to me. After a year and a half of our marriage my husband was taken with consumption. Priests were called in, and every effort was made to make him well according to our Brahman customs, but all in vain. I being very young did not know how to take care of him. Doctors were called in, yet he did not get well.

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2. Translate *any two* of the following passages into English:—

(a) জাপানৰ নাম ললেই সকলো সস্তা বস্তুলৈ মনত পৰে। জাপানী বুলিলেই যে দিন নিটিকা বস্তু এনে নহয়। পৃথিৱীৰ ভিতৰত জাপান আজি এটি শক্তিশালী জাতি। জাপানৰ প্ৰাকৃতিক সৌন্দৰ্য অতি মনোৰম। গোটেই দেশখনেই নানা তৰহৰ ধুনীয়া ধুনীয়া, ফলমূল গাছ-লতাৰে পৰিপূৰ্ণ। এই মনোমোহা ফলমূলবোৰ নানা দেশলৈ বপ্তানি হয়। জাপানী ছাত্ৰসকলৰ প্ৰথম শিক্ষা দেশপূজা। দেশপূজাৰ গুৰিত অন্তৰবে দেশক ভাল পোৱা, দেশৰ মাহুহক, দেশৰ প্ৰাকৃতিক দৃশ্যক, দেশৰ ব্যৱস্বক। ইয়াৰ সমান সন্মানজনক কাম ছাত্ৰজীৱনত একো নাই। ছাত্ৰসকলৰ আদৰ্শ—জন্মভূমি, জাতীয়তা, স্বাধীনতা।

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(b) আজিকালিৰ দৰে আগেয়ে আমাৰ দেশত ঠায়ে ঠায়ে ডাকঘৰ নাছিল। সেই কাৰণে মিতিৰ-কুটুমৰ খবৰ লোৱা, আৰু জৰুৰী বাতৰি দূৰলৈ পঠোৱাত বৰ অসুবিধা আছিল। আগৰ দিনত আমাৰ দেশত ঘোৰা আৰু মাহুহৰ ডাক আছিল। আজিকালি ডাকঘৰ হোৱাত দুই এক দিনতে শ-শ মাইল দূৰলৈ বাতৰি পঠিয়াব পাৰোঁ, আৰু কেই মিনিট, মানতে টেলিগ্ৰাফৰে খবৰ দিব পাৰোঁ। এই ডাক বিভাগটো চৰকাৰৰ। ইয়াৰ পৰা চৰকাৰৰ বছৰি বহুত টকা আয় হয়। কাৰ্ড আৰু লেফাফা আমি ডাকঘৰত কিনিবলৈ পাওঁ। আজিকালি প্ৰায় ডাকঘৰতে টেলিগ্ৰাফ আফিচ আছে।

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(c) আজিকালি অনেক ঠাইত গাঁৱলীয়া বেঙ্ক আছে। আমাৰ দেশত এই বেঙ্কবিলাক পতা আজি ত্ৰিশ বছৰেই হোৱা নাই। গাঁৱলীয়া বেঙ্ক বুলিলে বুজিব লাগিব গাঁৱৰ ভিতৰৰ এখন সভাৰ হাতত থকা ধন-ভঁৰাল। এখন বা কেইবাখনো গাঁৱৰ সীমা ধৰি লৈ এই বেঙ্ক স্থাপন কৰা হয়। বেঙ্কৰ উদ্দেশ্য হৈছে গাঁৱৰ লোকসকলৰ পৰস্পৰৰ ভিতৰত সহযোগ আৰু সহায়েৰে

আত্মনির্ভৰী হৈ স্কুলমে জীৱনযাত্ৰা কৰিবলৈ সুযোগ প্ৰদান কৰা। গৱৰ্ণমেণ্টৰ যিটো বিভাগে গাঁৱলীয়া বেঙ্কবিলাক পৰিচালনা কৰে তাক সমবায় সমিতি বিভাগ বোলা হয়। সমবায় সমিতিবিলাকৰ বেজিষ্ট্ৰাৰ জনেই বাই অধ্যক্ষ। তেওঁৰ তলত বহুত কৰ্মচাৰী আছে। তেওঁলোকে বেঙ্কবিলাক পৰিদৰ্শন কৰি ফুৰে।

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3. Frame sentences illustrating the meaning of *any five* of the following expressions:—

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দোকান-পোহাৰ, সাঁউদ, সৰিয়হ, মৰাপাট, লওপানী, কৰ-কাটল, উঠনা, খেতি-বাতি, ধকৰা, মহাজন, বণিয়া, মুদৈ, মহঙ্গা, কেঞা গোলা, চুৰিয়া, বিহা-মেখেলা।

4. Write an essay in Assamese on *any one* of the following subjects:—

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- (1) Qualities necessary for success in business enterprises.
- (2) The trade of Calcutta is mainly in the hands of non-Bengalis. Why?
- (3) The village money-lender.
- (4) Indian cinema films.
- (5) The present economic depression; its causes and remedies.
- (6) The income-earning power of the average Indian.
- (7) The life of *any* great Indian banker or merchant.
- (8) Describe an actual or imaginary visit to Barabazar or Canning Street, Calcutta.
- (9) Practical suggestions for the solution of the problem of unemployment among the educated middle class of India, with special reference to Bengal.
- (10) Materialism *versus* spiritualism.

HINDI COMPOSITION

Examiner—MR. NALINIMOHAN SANYAL, M.A.

The figures in the margin indicate full marks.

1. Please translate into English *one* of the following passages:— 20

(a) प्रत्येक देश की भीतर जो सिद्धी प्रचलित होती है—चाहे वे धातु की बनी हों, चाहे कागज की—उनकी ऊपर जो मूल्य लिखा रहता है, उसने दाम की चीजें, उनसे बदली में खरीदी जा सकती हैं। किन्तु अन्धदेश की व्यापारियों की दृष्टि में उनका मूल्य कुछ भी नहीं होता। उदाहरण के लिए भारत की सौ रुपये की नोट की ही सीजिए। किसी विदेशी की

दृष्टि में इसका वास्तविक मूल्य एक कागज के टुकड़े से अधिक नहीं हो सकता। उसी प्रकार हमारे रुपये की असली कीमत नौ दस पाने से अधिक नहीं क्योंकि इतने ही दाम की उसमें चांदी होती है। इस लिए सुवर्ण की प्रचलित मुद्रा का आधार मान लेने से अन्तर्राष्ट्रीय व्यापार में बड़ी सरलता होती है क्योंकि वस्तुओं का मूल्य रुपया, पाउंड, डालर, फ्रैंक आदि विभिन्न सिक्कों में निर्धारित होने पर भी सुवर्ण की दृष्टि से उन सब में कोई अन्तर नहीं पड़ता।

Or,

(b) जब वे कीकीनाडा के हार्डस्कुल में पढ़ते थे तब एक बार उन्होंने एक भिखारी के दीन स्वर सुने। इससे उन्हें इतना कष्ट पहुँचा कि कुछ समय तक पुस्तक पर वे अपना ध्यान न जमा सके। उन्हें यह बात बहुत भयानक जान पड़ी कि उनके देशवासियों में से कितने ही ऐसे हैं जो अत्यन्त गरीबी के कारण जीवन प्रयत्न यह नहीं जान पाते कि पेट भर भोजन करने से क्या सुख मिलता है। उन्होंने सोचा कि प्रकृति के विधान में कुछ दोष अवश्य है। वह दोष क्या है और कहाँ है इसका निर्णय वे नहीं कर सके। परन्तु सबसे अधिक इच्छा उनकी हृदय में अपने पास पड़ोस के लोगों की आर्थिक दशा सुधारने की हुई परन्तु कोई संतोषजनक युक्ति न सोच सके।

2. Please explain the underlined expressions in one of the following passages :—

15

(a) सबसे प्रमुख प्रश्न जिस पर विशेषरूप से विचार करने का प्रयत्न सम्मेलन में किया गया था, कदाचित् भिन्न भिन्न देशों की मुद्राओं के दृढ़ीकरण का था। इस प्रश्न का सम्बन्ध एक और जहाँ संसार की सुवर्ण समस्या से है वहीं दूसरी ओर उसका सम्बन्ध भिन्न देशों द्वारा लगाए गए व्यापार-बाधक-आयात-करों से भी है। जब तक जापान, अमेरिका आदि राष्ट्रों की अन्वदेशों में 'जु'गी की 'ऊ'ची 'ऊ'ची दीवारों का सामना करना पड़ेगा तब तक वे अपनी मुद्रा का विनिमय-मूल्य गिराते ही जायेंगे।

(b) जब योरोप के राष्ट्रों ने अपने अपने सिक्कों का मूल्य गिराया था और अमेरिका के निर्यात व्यापार को तुक्-सान पहुँचाने का प्रयत्न शुरु किया गया था तब तो अमेरिका ने उन्हें नहीं रोका था। परन्तु अब उसने भी वही नीति ग्रहण की। युद्ध कष्ट के सम्बन्ध में उनका रुख देखकर अमेरिका उनकी चालें समझ चुका है। जो राष्ट्र रण-सामग्री मुठाने में करोड़ों रुपये खर्च करते हुए भी समर कष्ट की किशत चुकाने में एक पैसा नहीं देना चाहते जो बड़े बड़े आयात कर बैठा कर उसका माल अपने यहाँ नहीं आने देना चाहते और जो अपने सिक्कों का मूल्य गिरा कर स्वयं उसीके बाजारों में उसे परास्त करना चाहते हैं उनकी बातों की अमेरिका कैसे मान सकता है ?

3. (a) Please correct the following sentences, giving reasons for your corrections:—

7

- (१) नमक पार कार लागने का चक्काई से नमक के व्यापार खूब नफा हुआ ।
- (२) दस वर्षों के बीच में वे उन्नति के शिखर पर पहुँच गया था ।
- (३) ईश्वर का दृष्टि पर उनके सारा संतान एकसा है ।
- (४) कवि की कविताओं को माँग ही ।
- (५) यह दृष्टि से भी आप में कोई नवीनता नहीं रह जाती ।

(b) Please fill up the gaps in the following sentences:—

8

- (१) राम—साँप को—कर—में बंद कर दिया ।
- (२) लड़कों—परीक्षा—दिनी ही रही है ।
- (३) मनमोहन—घोड़ा—चरते—में गिरपड़ा ।
- (४) समुद्र—गहगाई—का रंग जहाजवालों—आवश्यक है ।

4. Translate into Hindi *any two* of the following passages:—

20

(a) There are various means of conveying articles inside a country. The train, etc., have their own share in conveying things from place to place inside a country. Sometimes they are conveyed on the back of animals like camels and donkeys, and sometimes men themselves carry them on their back. But there are only two important means of transport from country to country and they are the ship and the train. The ship takes them across the ocean and the train over the land.

(b) One sure way to improve the life of the Indian villager is to establish primary schools everywhere in the villages and to make elementary education free and compulsory. This will in course of time help to remove a great deal of ignorance, which is a great impediment to the progress and improvement of the poor rustic. Hospitals have got to be established and competent medical men employed to alleviate the pains of the sick and the suffering.

(c) Turning again to the man who seeks happiness in power and glory, we find that the saying 'Unhappy rests the head that wears the crown' is only too true. The moment they become entrusted with power and responsibility they become deprived of the ease and freedom which they enjoyed greatly before as their own.

5. Please write a letter, in Hindi to the Postal authorities, intimating to them the change of the address of your firm.

10

6. Please write a short essay in Hindi on *one* of the following subjects:—

20

(a) The advantages and the disadvantages of the 'co-operative movement'.

(b) The art of 'advertisement'.

(c) The art of 'salesmanship'.

URDU COMPOSITION

Examiner—SHIFAU-MULK SYED MD. SADIQ.

The figures in the margin indicate full marks.

1. Translate into Urdu:—

40

A.

In 1492 Columbus sailed westward under the flag of Spain to seek India beyond the Atlantic. He found America instead. An expedition consisting of three ships under Vasco de Gama started from Lisbon five years later in the south-eastern direction. It doubled the Cape of Good Hope and cast anchor off the city of Calicut after a protracted voyage of nearly eleven months. An earlier Portuguese emissary, Covilham, had reached Calicut overland about 1487. From the first De Gama encountered hostility from the Moors or rather Arabs, who monopolised the sea-borne trade and influenced the Hindu Rajah against newcomers.

B.

The story of the independent Muslim kings of Bengal seldom offers any points of contact with the outside world. The province went its own way disregarding and disregarded by other kingdoms. The best and most famous of them was Alauddin Husain Shah, a Syed of Arab descent who held the office of Vazeer under a tyrant, Muzaffaruddin Husain Shah Shamsuddin. This king was deposed and killed and then the chiefs elected Alauddin to be their king. He justified their choice, and his name is still familiar in Bengal.

2. Expand the idea contained in the following:—

10

گر فرشتہ رش ہوا کوئی تو کیا
آدمیت چاہئے انسان میں

3. Compose sentences illustrating the uses of:—

5

* دم دینا - دم اُکھڑنا - دل بھڑنا - آنکھ دکھانا - آنکھوں میں سمانا

4. Translate into English:—

15

میں ہوٹل کو واپس جا رہا تھا کہ عزیزا نام ایک موٹا تازہ نوجوان مانجھی میرے پاس آیا اور کہنے لگا کہ مہربانی کر کے میری کشتی بھی دیکھ لیجئے - اس میں ضرورت کا سب سامان موجود ہے اور کرایہ صرف پچیس روپیہ ماہوار - میں آپ کا سب کام کرونگا - آپ کو نہ بارچی کی ضرورت ہوگی نہ کسی اور نوکر کی - میں نے اسی وقت اُسکی کشتی کو جاکر دیکھا اور اُسے اپنی خواہش کے مطابق پایا - کشتی کا نام چشم بلبُل تھا جو مجھکو بہت پسند آیا *

5. Write an essay in Urdu on *one* of the following:—

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(a) Self-help, (b) Duty, (c) Female Education.

TAMIL COMPOSITION

Examiner—REV. T. SITHER, M.A., B.D.

Candidates are required to give their answers in their own words as far as practicable.

1. Translate *any two* of the following passages:—

(a) In every country where there is a large and growing population, there is a strong tendency to destroy forests. Timbers which have grown for scores or hundreds of years may be very valuable, or the land may be wanted for cattle-grazing or for cultivation, in which case the forests may be burnt down as the cheapest and quickest way of clearing the land. This is the plan now adopted in New Zealand for clearing the land, and forests of enormous value, if their timber could be removed to the place where it is wanted, are burnt in order that flocks and herds may go, or corn be planted in place of the trees.

(b) At the present moment there are in India a great number of people who take rent and do not do any corresponding work in return. This is particularly the case in Bengal, where under the permanent settlement the revenue remains much the same as a hundred years ago, but the rents are now four-fold what they were then. We have created a class of landowners. Now some of the landowners make a good use of their money and help on the agriculturists: they erect buildings, banks, post offices, and do other work of great value for which they get a return, but there are others who do not do these things.

(c) Every agriculturist, every agricultural chemist, every intelligent person who has had to do with land or has considered the condition necessary for the production of good crops from the soil, knows that it is necessary to manure the land if good results are required. In some places, as in the delta of the Nile, the land is manured by the flooding of the river every year, which brings down a lot of mud from the mountains of Abyssinia, which flows over the land and fertilises it. The same thing happens in India, where the lands are flooded by the overflowing of the Ganges and the Brahmaputra, and many other rivers. This insures the fertility of the soil although it is quite possible that even on these lands the addition of manure of another kind may be of great benefit.

2. Write a letter to your guardian in Madras, stating your impressions of Calcutta as a Commercial Centre and as a possible market for goods produced in Madras.

3. Write an essay on *any one* of the following subjects:—

- (a) The Future of the handloom industry.
 - (b) Hindi as a commercial language in India.
 - (c) Development of road motor transport in rural parts.
-

MALAYALAM COMPOSITION

Examiner :—REV. C. E. ABRAHAM, M.A., B.D.

The figures in the margin indicate full marks.

1. Translate into English the following passages :—

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(a) നാളികേര വ്യവസായത്തെയും അതുളനിയും അഭിവൃദ്ധിപ്പെടുത്തുവാനുള്ള മാർഗ്ഗങ്ങളെയും പഠിപ്പിച്ചു പഠിപ്പിച്ചു വേദപ്രസംഗം നടത്തുവാൻ ആവശ്യമുണ്ടു. ഇപ്പോഴത്തെ തൊണ്ട ശേഖരിപ്പും അതുചെയ്യിച്ചെടുക്കുന്ന രീതിയും നിമിത്തം നിർമ്മാണച്ചെലവ് ആവശ്യത്തിൽ അധികമായിട്ടാണ് കണ്ടുവരിക. അതിനാൽ ഇത് കടിയിൽ വ്യവസായമെന്ന നിലയിൽനിന്ന് വന്നിട്ടു ഒരു വ്യവസായമെന്ന വിധം നടത്തുകയും രസായന പ്രയോഗ മാർഗ്ഗം ചെറിയൊരു ഗുണം വർദ്ധിപ്പിക്കുകയും ചെയ്താൽ കയർ വ്യവസായത്തിന് ശോഭനമായ ഒരു ഭാവം ഉണ്ടാകുവാൻ മാർഗ്ഗമുണ്ടു. നാളികേര വ്യവസായാധിപതന്താൽ വളരെ കഷ്ടപ്പെടുകയും പുതിയ വിപണികൾ കാണാതെ പരിഭ്രമിക്കുകയും ചെയ്യുന്ന തിരുവിതാംകൂർ, ഈ വ്യവസായത്തിൽ കാലോചിതമായ പരിവർത്തനങ്ങൾ ഉണ്ടാക്കുകയും ലോകത്തിന്റെ അഭിവൃദ്ധി അറിഞ്ഞു നിർമ്മാണത്തിൽ ഏർപ്പെടുകയും ചെയ്യേണ്ടതാവശ്യമാണ്.

(b) അടുത്തതായി പറയുവാനുള്ളത് വിദ്യാഭ്യാസനത്തിന് അംഗീകരിക്കേണ്ട ഭാഷയെപ്പറ്റി കമ്മറിക്കാർ ചെയ്തിരിക്കുന്ന ശുപാർശ സംബന്ധിച്ചാണ്. സെക്കണ്ടറി സ്കൂളുകളിൽ മലയാളഭാഷ അംഗീകരിക്കുന്ന പക്ഷം വിദ്യാർത്ഥികൾക്കു ശരിയായ ഇംഗ്ലീഷ് ജ്ഞാനം ലഭിക്കുവാൻ ഇടയില്ലെന്നും കോളജ് പഠനത്തിന് ഇതു ബാധകമാകുമെന്നും സാങ്കേതിക വിഷയങ്ങളിൽ വേണ്ട പുസ്തകങ്ങൾ മലയാളത്തിന് ഇല്ലെന്നും ഉള്ള അഭിപ്രായം പലകുറവുണ്ട്. ഈ അഭിപ്രായത്തെക്കൂലും കഷ്ടമായി പരിശോധിച്ചശേഷം കമ്മറിക്കാർ മലയാള ഭാഷയിൽ തന്നെ അധ്യയനം നടത്തണമെന്നുള്ള നിർദ്ദേശമാണ് നൽകിയിട്ടുള്ളത്.

2. Translate the following passages into Malayalam ;—

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(a) If investments are to be made, there should necessarily be savings ; or, in other words, surplus of income over expenditure. Even if there be surplus, unless there is a general habit or will on the part of the community to save, the surplus will not be invested. The habit would be normally encouraged and developed if there are safe, sound, and convenient institutions commanding a sense of security. But the ordinary villager, far from saving, has only a growing volume of debt from year to year. Besides the failure of crops through adverse weather conditions, his unprofitable borrowings at high rates of interest, unbusinesslike methods of marketing, and his occasional indulgence in large expenditure on social events tend to reduce his savings to nothing.

(b) Indigent or prosperous, the life of the agriculturist has been generally one of meek contentment. There are families with an income of only about Rs 50 a year. Even with this low income, the agricultural family is better off than a non-agricultural family with the same or higher income. This is because Nature is bountiful to the farmer, his small garden supplying his simple wants. He is contented with what he gets. The whole of his labour is over in a few days if he grows a crop of paddy. Other crops also do not require continuous attention. When there is work, the women share it with the men.

3. Write an essay in Malayalam on *one* of the following subjects :— 40

- The place of co-operation in agriculture.
- The uses and limitations of technical education.
- Advertisement in business.
- Motor transport.

FRENCH COMPOSITION

Examiner—MR. N. N. CHANDRA, M.A.

The figures in the margin indicate full marks.

1. Translate into English *any two* of the following passages:— 40

(a) En réalité les choses *se passeront* beaucoup plus simplement, ainsi que cela s'est annoncé déjà à la conférence de Londres qui vient de se terminer. Un petit groupe de quelques personnes *disposant* de fonds considérables se réunit et s'intitule mandataire des éléments non-Sionistes. Moyennant une contribution à *déterminer* et à verser à la caisse Sioniste, l'Organisation Sioniste leur reconnaît cette qualité. Le tour est joué—la Jewish Agency créée. Il y a d'un côté un groupe à la tête de quelques millions de dollars qui cherche une consécration officielle pour jouer un rôle prépondérant—il y a de l'autre côté une organisation officielle à mener des pourparlers avec des puissances.

(b) J'aurais voulu la Grèce aussi grande que la France. Si ce sont des illusions, ce sont au moins des illusions salutaires. *Il faut* chercher le plus pour obtenir le moins. Mais on ne peut rien, hélas! contre les impossibilités historiques. Pour le moment, la Grèce n'est pas en état de remplir toute sa destinée. Je serais consolé si elle pouvait au moins devenir elle-même, si d'un effort inlassable, je *pouvais* la porter à la conscience de son génie. Plus d'une fois j'en désespère, mon bel entrain fléchit par instants. Le mal a fait trop de progrès. Les préjugés sont trop profondément enracinés dans les esprits.

(c) Voici un livre d'une lecture un peu ardue, intitulé *La nouvel impérialisme allemand*. L'auteur M. R. Santer s'attache à suivre l'évolution qu'a prise, depuis le plan Dawes, le capitalisme industriel et financier allemand évolution qui se manifeste par la constitution des grands monopoles tendant à englober des branches entières de l'industrier, acier, industrie chimique électricité etc. Il dénonce les dangers nouveaux de conflits internationaux que présente, selon lui, cet impérialisme nouveau style, qui vise moins à la surproduction et à la conquête, qu'à une restriction et à un contingentement de la production et au maintien d'une hausse factice des prix par le moyen de tarifs douaniers agressivement protectionnistes.

2. Write grammatical notes on the words italicized in the above passages. 10

3. Correct the grammatical mistakes in the following passage:— 10
Ma chère dame, figurez-vous qu'il n'a pas fais asseoir Victorine, qu'est restée debout. La pauvre petit s'est jeté aux pied de son père et lui as dit avec courage qu'elle n'insistait autant que pour sa mère qu'elle obéirait à son volonté sans murmure.

4. Write a short essay in French, giving your impressions on the recent talks on Indo-Japanese trade. 20

5. Translate the following passage into French:— 20
We arrived at Villavernia about five o'clock, a depressing town with one long main street with cheerless-looking houses. Although the Syndic of Pontedecimo had telephoned to them and told them to expect us, yet the welcome was half-hearted and unsympathetic. Those hills had made all the difference, we seemed to have entered another world. There was no hotel, so we were given billets in private houses. The evening became chilly and cold and we needed fire that night. We sent for a dozen petrol boxes, broke them up and, with the aid of a cupful of paraffin, had a fire roaring up the chimney in no time.

GERMAN COMPOSITION

Examiner—DR. K. L. GANGULI, B.SC., DR. ING. (Munich).

The questions are of equal value.

1. Translate into English:—

Gegen Ende des vierzehnten Jahrhunderts lebte in London ein reicher Kaufmann, der ein Waisenkind, namens Richard Whittington, als Lehrlingen angenommen hatte. Eines Tages wollte der Kaufmann ein grosses Schiff mit Waren nach einem fremden Lande senden. Da sagte er dem Knaben im Scherz. Richard, hast du nicht etwas mitzuschicken, was du verkaufen könntest?

2. Translate into German:—

In about four weeks we hope to have the whole order ready for sending off and we beg you kindly to let us know in what way the goods are to be sent.

Do you not think it would pay to make the attempt to introduce our produce in your market?

3. State:—

Infinitive, Past tense and Past Participle of the German verbs for: find, win, tie, meet, speak.

4. Write a short essay in German on any subject of commercial interest.

GENERAL ECONOMICS

Examiner—DR. J. P. NIYOGI, M.A., PH.D.

The questions are of equal value.

Six questions only to be attempted.

1. How far is the teaching of Malthus relevant to the population problem of the world in our days?

2. What is the economic justification of speculative dealings in (a) stock exchange securities, and (b) land?

3. What are the chief determinants of Localization of industry? Indicate the main advantages and drawbacks of such Localization.

4. Indicate the theoretical and practical importance of the distinction between Prime and Supplementary costs.

5. 'The difference between Rent, Wages, and Profits is one of degree only.' (Clay.) Explain this proposition.

6. Show how banks can manufacture credit, and indicate the limitations on this power of the banks.

7. 'The influence of the production of gold upon prices is greater than ever it was, but it is indirect.' (Clay.) Elucidate this statement.

8. Discuss the nature and importance of the principle of Comparative Cost as the regulator of international trade.

9. Indicate the limits to the fluctuations of the Foreign Exchanges, and show why the value of bills fluctuates beyond these limits in special cases.

10. Examine and compare the merits of the different interpretations placed upon the principle of Justice in taxation.

INDIAN ECONOMICS

Examiner—DR. NRIPENDRANATH DATTA, M.A.

The questions are of equal value.

Attempt ANY FIVE questions.

1. Explain the distribution of India's rainfall, and describe its importance to the economic life of the people.

2. Classify soils in India, giving the characteristic qualities of each and the important crops that are grown on each.

3. Assess the relative merits and defects of the permanent and temporary settlements of land revenue. Which will you advocate?

4. What are the causes of agricultural indebtedness of India? What remedies will you propose?

5. Summarize the main features of India's foreign trade. For the development of which industries do you think that India has special facilities?

6. Describe the gold exchange standard as it operates in India. Will you retain the system or do you want a change? Give reasons.

7. What are the economic results of the 1s. 6d. rate? Discuss the relative merits of the 1s. 6d. and 1s. 4d. rates.

8. How is credit organized in India? Can you suggest improvements in the existing system?

9. What are the attributes of a sound system of taxation? In this connection critically examine the tax system of the Central and Bengal Governments.

10. Describe the systems adopted in India for railway developments. Do you advocate State or Company management? Give reasons.

ACCOUNTANCY

Examiners— { Mr. NARENDRANATH SARKAR, M.A.
 ,, PRAFULLACHANDRA NANDI, B.Sc. (CAL.), B.A.
 (CANTAR).

The questions are of equal value.

Answer ANY SIX questions.

1. The books of a firm consisting of three partners, X, Y, and Z, are kept on a Single Entry System. The following Statement of Affairs discloses their position as on December 31st, 1931:—

	Rs.		Rs.
Capital—			
X	... 9,360	Leasehold Property	... 5,000
Y	... 6,240	Plant and Fixtures	... 3,500
Z	... 3,900	Stock	... 6,800
Creditors	... 4,300	Debtors	... 9,200
Bills Payable	... 2,000	Cash	... 1,300
	<u>25,800</u>		<u>25,800</u>

An examination of the books shows that at the end of the following year the Debtors amount to Rs. 10,000, Cash to Rs. 2,700, Creditors to Rs. 3,400, Bills Receivable to Rs. 505, and that the partners had drawn on account of profits, Rs. 750, Rs. 500, and Rs. 400 respectively, and that on July 1st, 1932, X had lent the firm Rs. 1,000 at 6% per annum. The stock on 31st December, 1932, was valued at Rs. 7,900. It is agreed by the partners to write Rs. 500 off the Leasehold Property Account, to reduce the Plant and Fixtures value by 10%, and to allow 5% interest on the respective capitals.

The profits disclosed at the end of any year are shared by the partners in the proportions that their capitals bore to one another at the beginning of that year.

Prepare a statement, showing the profit for the year ended 31st December, 1932, and a Statement of Affairs as on that date.

2. You, as book-keeper, are required to adjust the following errors in, and omission from, A. B. and Co.'s books by means of Journal Entries.

(a) The cashier had received Rs. 183 4as. 6p. from a debtor and Rs. 12 10as. 8p. for cash sales; he had paid Rs. 8 6as. 4p. for sundry goods purchased. No entries had been made in A. B. and Co.'s books.

(b) Rs. 2,250 standing to the debit of Allenbury represented payment for a Motor Car purchased from them.

(c) Goods to the value of Rs. 183 invoiced out to Kamalalaya & Co. had also been included in stock-on-hand.

(d) A Bill Receivable for Rs. 150 had been discounted at the Central Bank for Rs. 142-10-0 and that was the amount which had been credited to the account of the acceptor.

3. Alex Arthur, London, received from Sashi & Sons of Calcutta, Merchants, an order for one ton of high-speed steel at £130 per ton f.o.b. London. The account was to be paid on presentation of Alex Arthur's draft at sight with documents attached, freight and charges to be paid by the consignee.

Alex Arthur executed the order. State what records of the transaction should be made in Alex Arthur's books. Make a copy of the Bill drawn by Alex Arthur on Sashi & Sons, and state what documents would be attached to it.

4. (i) State some of the special items which you would expect to find in the Balance sheets of the following undertakings:—

- (a) Tea company.
- (b) Collieries.
- (c) Banks.
- (d) Life Insurance Companies.

(ii) What do you understand by an 'insurable interest' in a contract of life assurance? Has Rabi's wife, son, servant, or creditor an insurable interest in Rabi's life?

5. (a) What purpose does the following accounts serve, and how are they created in the books?—

- Goodwill.
- Reserve Account.
- Sinking Fund.
- Depreciation.

(b) Define all the various classes of shares in a company with their respective rights.

6. (a) What are—

- (i) Banker's Drafts ;
- (ii) Documentary Bills ;
- (iii) Accommodation Bills?

(b) Some accountants consider that an intangible asset, such as 'Goodwill', should be gradually written off the Balance Sheet. Other accountants consider it preferable that the item should remain on the asset side of the Balance Sheet, and that a reserve should be built up against it, such reserve being shown on the liability side. Define 'Goodwill', and state which course you consider the better, giving reasons for your answer.

7. (a) What is the difference between an 'I.O.U.' and a Promissory Note?

(b) A firm of Builders, carrying out large contracts, kept, in a Contract Ledger, separate accounts for each contract. On the 30th June, 1931, the following was shown as being the expenditure in connection with contract No. 222:—

				Rs.
Bricks and Mortars purchased	...	...	...	58,165
Materials from store	...	...	...	9,800
Wooden doors, windows, etc.	...	...	...	12,500
Iron, steel, etc. purchased	...	...	...	3,600
Labour	...	...	...	74,600
Sundry Expenses	...	...	...	2,025
Proportion of supervision charges	...	...	...	8,700

The contract, which had been commenced on the 1st February, 1931, was for Rs. 300,000; and the amount certified by the Engineer, after deduction of 20% retention money, was Rs. 120,800, the work being certified to 30th June, 1931. The materials on the site at that date were valued at Rs. 10,000.

Total amount of depreciation in respect of materials at site to 30th June, 1931, was Rs. 500.

Prepare an account, showing the profit on the contract to 30th June 1931.

ECONOMIC GEOGRAPHY

Examiner—DR. MANMOHAN RAY, M.A., D.Sc. PH.D.

The questions are of equal value.

Only six questions are to be attempted.

1. Discuss the relative advantages and disadvantages of the Suez and Panama routes from Western Europe to Eastern Asia. Large quantities of jute goods are exported from Calcutta to the Pacific ports of South America. What route do the ship follow for this trade, and why?

2. State the present distribution of the world's merchant marine. How have the relative positions of the countries in regard to merchant marine changed since the last Great War? Who are the principal carriers of India's sea-borne trade? What are 'Tramp' steamers, and what sort of commodities do they carry?

3. What are the principal steel exporting countries of the world? What are the principal consuming markets of steel? Describe briefly the state of the steel import trade into India. Do you expect any change in the source of supply in the near future?

4. Discuss the distribution of non-ferrous metals in the British Empire, with special reference to the sources of supply within India.

5. Who are the principal buyers of Indian cotton? What are the chief sources of supply of cotton to the Lancashire cotton industry? Do you think that the British Empire can be self-supporting in this commodity?

6. State briefly the changes in the direction of exports of India's staple products since the Ottawa Agreement.

7. What is Rayon? To what extent does it compete with Cotton and Silk? What are the principal countries producing this article? Do you think India can produce rayon sufficient for her needs?

8. Describe briefly the developments in the transport system of the 'Middle East'? How will India's trade be affected by such developments in that part of the world?

9. State briefly the prospects of France, with her Colonial Empire, becoming a self-supporting economic unit?

10. Draw a map of India and show the important sources of supply of—

- (a) Coal ;
- (b) Mineral oil ;
- (c) Hydroelectricity.

What industries have grown around these centres?

BUSINESS ORGANIZATION

Examiner—MR. S. ZAMAN, B.A., A.C.A.

The figures in the margin indicate full marks.

GROUP A.

*Attempt ANY THREE questions from this group, of which
Questions 6 must be one.*

1. What is meant by 'Balance of Trade'? Is a favourable balance of trade always a sign of prosperity? Discuss fully. 16
2. Define the terms 'Factory Oncost' and 'Office Oncost', and explain why their allocation to final cost is a difficult affair. 16
3. Explain how 'indent business' is carried on in India. What do you mean by 'firm offer' and 'open prices'? 16
4. State and explain the various implied warranties in the case of a marine policy. 16
5. Discuss how a business house should, in times of prosperity, manage its finance so that in times of subsequent trade depression it may not find itself financially embarrassed. Give suitable examples from the tea trade and mofussil loan office business of Bengal. 16
6. Explain the difficulties experienced by Indian merchants in the Calcutta Jute market in disposing of their stock to the mills. 16

GROUP B.

*Attempt ANY TWO questions from this group, of which
Questions 9 must be one.*

7. Can Banks help to develop the Inland and Foreign Trade of a country? Explain fully by giving suitable examples, showing clearly the different steps taken by Banks to safeguard their interests. 16
8. Explain the points of similarity and otherwise between a Co-operative Society and a Joint Stock Company. 16
9. What is a Hundi? Distinguish between a Darshani Hundi and a Muddati Hundi. In what respects does a Hundi differ from a Bill of Exchange? Explain how a Hundi, although perfectly negotiable, does not come under the Negotiable Instruments Act. 16
10. State under what circumstances a company can allow interest upon its share capital. 16

GROUP C.

Attempt ANY ONE question from this group.

11. A city municipality wants to float a debenture loan on the security of its rates. As Financial Adviser to the municipality, draft a report to be submitted to the Finance Committee, discussing the various considerations that may arise. 20
12. Explain what you mean by indexing a letter and writing the précis of a correspondence extending over several letters. 20

Index the following letter in proper form:—

48, Merton Road,
Wimbledon, S.W.,
1st November, 1933.

The World's News Offices,

London, W. C.

Dear Sir,

With reference to your advertisements in The World's News, offering for sale a Minervette Motor car, 5 h.p., two-seater, which has only been used for four months, I should be glad if you would make an appointment with me to view the car, and if the result be satisfactory, to make arrangements for the trial run. Should the car be in good condition I should be prepared to make you an offer of, say, £80; £40 cash down, and the other £40 at the end of three months.

Trusting you will reply to this at your earliest convenience.

Yours faithfully,
Walter H. Goodman.

INLAND AND FOREIGN TRADE

Examiner—DR. HIRENDRALAL DE, M.A., D.Sc.

The questions are of equal value.

Answer ANY SIX questions.

1. Explain fully how international values are determined.
2. Describe the special features of Dutch auctions for the sale of overseas products in Holland, and examine the relative advantages and disadvantages of such auctions from the point of view of the seller.
3. Comment on the peculiarities of the indent business which is prevalent in the import trade of India.
4. Examine critically the commercial organization in the marketing of jute from the cultivator to the shipper who exports the fibre to foreign countries.
5. How are British exports to India usually financed? Do you agree with the view that they are financed 'in the cheapest way with the help of the London money market'?
6. Describe the leading features of Ottawa trade agreement between India and the United Kingdom, and discuss the effect of the agreement on our exports to the latter country.
7. What are the chief causes of fluctuations in foreign exchange? How can traders safeguard themselves against the risk due to such fluctuations?
8. Describe the present position of Japan in India's foreign trade, mentioning the chief items of imports from and exports to that country.
9. An exporter in Calcutta sends to his agent in London a 90 days' sight bill for £20,000, with instructions to get the bill discounted in the London market immediately after acceptance, and then to remit the proceeds by telegraphic transfer to Calcutta. Show (a) the sum in

sterling obtained in London after discounting the bill (Bank rate in London 3% and stamp duty is 1s. per £100), and (b) the sum in rupees remitted to Calcutta (T. T. on Calcutta is 1s. 5½d. per rupee.)

10. Write notes on *any four* of the following:—

- (a) Specie Points.
 - (b) Charter Party.
 - (c) Bonded Warehouse.
 - (d) Consular Invoice.
 - (e) Letter of Hypothecation.
 - (f) Multiple Shop System.
-

ELEMENTARY COMMERCIAL LAW

Examiner—MR. SATYENDRANATH CHATTERJEE, B.Sc., BAR-AT-LAW.

Candidates are required to give their answers in their own words as far as practicable.

The questions are of equal value.

Answer ANY FOUR questions from EACH half

FIRST HALF

1. When is a contract voidable, and when is it void?

A fraudulently informs *B* that *A*'s house is free from encumbrance. *B* thereupon buys the house. The house is subject to a mortgage. What are the rights of *B*?

A agrees to buy from *B* a certain elephant. It turns out that the elephant was dead at the time of the bargain, though neither party was aware of the fact. Discuss the rights of *A* and *B*.

2. What is a bailment?

A hires a motor car of *B*. The car is unsafe, though *B* is not aware of it, and *A* is injured. What are the rights of *A*?

3. What do you understand by 'undisclosed principal'? What are the rights and liabilities of such a principal?

A enters into a contract with *B* to sell him 500 maunds of rice and afterwards discovers that *B* was acting as agent for *C*. Whom can *A* sue for the price of the rice?

4. When and how does the property pass in a contract for the sale of unascertained goods?

A, a ship-builder, contracts to sell to *B* for a stated price a vessel lying in *A*'s yard; the vessel to be rigged and fitted for a voyage and

the price to be paid on delivery. Has the property in the vessel passed to *B*?

5. What is a Seller's lien? When can a seller stop the goods while they are in transit? When are goods deemed to be in transit?

6. When is a surety discharged from his liabilities?

A contracts with *B* for a fixed price to build a house for *B* within 6 months, *B* supplying the necessary timber. *C* guarantees *A*'s performance of the contract. *B* fails to supply the timber. Discuss the liabilities of *C*.

7. What are the rights and liabilities of parties in case of an anticipatory breach of contract?

SECOND HALF

8. What do you understand by the principle of 'holding out' in case of partnerships?

9. What is an equitable mortgage? How can it be effected?

10. Who is a holder in due course? What are his rights? What are the rights of a holder who takes over a Bill of Exchange after it has become due?

11. When is a notice of dishonour unnecessary in respect of a Bill of Exchange?

12. When and how can the compulsory liquidation of a limited company be brought about?

13. When can an award be remitted for the reconsideration of the same arbitrator? When can you have an award set aside?

14. What are acts of insolvency? When can a creditor apply for the adjudication of his debtor?

ADVANCED ACCOUNTANCY AND AUDITING

FIRST PAPER

Examiner—MR. G. BASU, B.A., A.S.A.

ANY SIX questions may be attempted.

1. The books of Banerji & Mukherji, who are equal partners, are balanced yearly as on 31st December. Before profits are ascertained and divided, 5 per cent. interest is allowed upon partners' Capital. Depreciation at the rate of 5 per cent. is written off the Plant Account, and a provision of 5 per cent. is made for Bad and Doubtful Debts. One year's interest, at the rate of $4\frac{1}{2}$ per cent. per annum, is due upon the Loan on Mortgage, and has not yet been passed through the books.

The Stock on hand as on 31st December, 1933, was valued at Rs. 32,250. The following are the final balances as on 31st December, 1933:—

	Rs.		Rs.
Purchases ...	1,64,500	Trade Charges ...	4,000
Manufacturing Wages ...	21,500	Premium on Lease Account (6 years unexpired as on 1st January, 1933) ...	24,000
Sales ...	2,48,000	Sundry Creditors ...	1,53,450
Banerji—		Loan on Mortgage ...	50,000
Capital Account ...	50,000	Freehold Land and Buildings ...	80,000
Drawing Account ... (including Interest)	5,500	Plant Account ...	40,000
Mukherji—		Sundry Debtors ...	1,31,000
Capital Account ...	20,000	Cash at Bank ...	12,000
Drawing Account ... (including Interest)	3,500	Reserve for Bad and Doubtful debts (1st January, 1933) ...	6,000
Stock (1st January, 1933) ...	30,000		
Salaries ...	8,200		
Rates and Taxes ...	3,250		

Prepare a Trading and Profit and Loss Account for the year ended 31st December, 1933, and a Balance Sheet as on that date.

2. (a) What is meant by Goodwill in a partnership? How does Goodwill arise? When is Goodwill brought in the books, and when not?

(b) Ghosh and Chatterji are in partnership, sharing profits and losses two-thirds and one-third respectively. They agree to admit Ray as a partner on condition that he brings in Rs. 18,000, of which Rs. 2,400 is to be regarded as premium for Goodwill; the money, however, is to remain in the business. Make the necessary entries in the books.

3. De, Dutt, and Kar were in partnership, sharing profits and losses as follows: De $\frac{1}{3}$, Dutt $\frac{1}{3}$, and Kar $\frac{1}{3}$.

The Capital Accounts were fixed under the Partnership Agreement. As the result of several consecutive years' losses, the firm's Balance Sheet on 31st March, 1924, was as under:—

<i>Liabilities.</i>		<i>Assets.</i>	
	Rs.		Rs.
Capital Accounts—		Current Accounts—	
De ...	5,000	De ...	2,195
Dutt ...	2,000	Dutt ...	1,733
Kar ...	1,000	Kar ...	1,520
Sundry Creditors ...	2,953	Plant and Machinery ...	1,050
Bank Loan ...	5,500	Stock-in-trade ...	6,059
		Sundry Debtors ...	3,572
		Cash in hand ...	324
	<u>16,453</u>		<u>16,453</u>

It was resolved to dissolve the partnership as on this date, and shortly afterwards Kar was adjudicated a bankrupt and could contribute nothing towards his deficiency in the firm. The firm's assets were realized as follows:—

	Rs.
Plant and Machinery ...	600
Stock-in-trade ...	5,230
Sundry Debtors ...	3,555

You are required to close the books of the firm.

4. (a) Draft a *pro forma* Statutory Report of a Company, limited by Shares.

(b) Is it required to be audited?

(c) Give the auditor's certificate to a Statutory Report.

5. From the following balances appearing in the books of the Calcutta Trading Company, Limited, prepare Profit and Loss Account for the year ended 31st March, 1934, and the Balance Sheet as on that date, for presentation to the shareholders at the annual meeting of the Company.

	Rs.
Authorized and Subscribed Share Capital—	
10,000 5% Preference Shares	1,00,000
10,000 Ordinary Shares	1,00,000
Freehold Property at Cost	2,32,000
Plant and Machinery (at Cost, less Depreciation)	75,000
Investments (present market value, Rs. 50,000)	80,000
Debts due to the Company	35,000
Bills Receivable	8,000
Cash in hand	6,800
Stock-in-trade	25,000
Reserve Fund	50,000
5% Debenture Stock	75,000
Debenture Interest due on 31st March, 1934	1,875
Unclaimed Dividends	1,925
Bank Overdraft	25,000
Reserve for Income-Tax	92,600
Creditors	30,000
Profit and Loss Account Balance at Credit (1st April, 1933)	1,000
Dividends Received	2,400
Loss on Trading	3,000
Interest on Debenture Stock	3,750
Bank Interest (paid)	1,250
Dividend on Preference Shares	5,000
Interim Dividend of 5% on Ordinary Shares	5,000

The Directors propose to make a transfer of Rs. 22,600 from the Income-Tax Reserve in order that a Dividend of 10 per cent. for the year on the Ordinary Shares may be paid. Give effect to this. Also make any further adjustments you consider necessary.

6 (a) The following balances are abstracted from the books of the Commonwealth of India Insurance Company, Limited, as on the 31st December, 1933:—

	Rs.
Life Assurance Fund as on 1st January, 1933	10,12,000
Premiums	1,80,000
Interest, Dividends, etc.	40,000
Fines for revival of Policies	30
Claims by Death	30,000
Claims by Maturity	50,000
Expenses of management	42,000
Consideration for annuities granted	3,000
Annuities	3,910
Surrenders	6,500
Income-Tax	1,700
Commission to Agents	37,300

	Rs.
Bonuses in Cash	1,200
Re-insurance Premium paid	4,150
Medical Fees	3,010
The following adjustments are to be made:—	
Outstanding Premium	7,500
Claims payable	20,100
Interest accrued on Investments (gross)	5,700
Income-Tax payable on above	310
Medical Fees outstanding	750

The Directors have further resolved that a claim of Rs. 1,000, included in the above claims payable, be written off as it is ten years old and not likely to arise.

The Managing Director is to be paid at the rate of 5 per cent. on the net increase of Life Assurance Fund during the year before providing for such commission.

Prepare the Revenue Account for the year ended 31st December, 1933.

(b) The Valuation Liability on the same date, as ascertained by the Actuary, amounted to Rs. 9,36,235. The Directors, according to the advice of the Actuary, resolved as under:—

- (i) That 80 per cent. of the net surplus be utilized as a reversionary bonus to the Policyholders.
- (ii) That 10 per cent. of the net surplus be utilized towards Dividend.
- (iii) That Rs. 5,000 be reserved for actuarial expenses, and the balance be carried forward.

Pass the necessary Journal entries, giving effect to the above resolutions of the Directors.

7. (a) Explain what is meant by 'Departmental' Accounts. State briefly the advantages to be derived from a system of 'departmental' accounts. What is meant by the 'allocation of indirect expenses', and on what principles is the allocation made?

(b) The Carpet Trading Co. manufactures and sells Linoleum and Carpets. From the following particulars prepare Trading and Profit and Loss Accounts, apportioning the undivided expenses in proportion to the turnovers of the departments:—

	Linoleum Dept. Rs.	Carpet Dept. Rs.
Stock (1st January, 1933)	1,956	2,358
Purchases (net)	8,853	3,694
Wages	3,985	2,071
Manufacturing Expenses (including Depreciation of Plant)	2,057	1,447
Sales (net)	21,464	10,732
Stocks (31st December, 1933)	1,845	2,117

Salaries, Rs. 3,680; Rent, Rates, and Taxes, Rs. 1,679; General Expenses, Rs. 861.

8. A Limited Company went into voluntary liquidation, with liabilities amounting to Rs. 30,000 and assets which eventually realized Rs. 1,78,000. The Capital of the Company consisted of 10,000 Preference Shares of Rs. 10 each, on which Rs. 7 was called and paid up; the holders of 8,000 Preference Shares had, however, paid up the full Rs. 10 in advance of calls. There were also 10,000 Ordinary Shares of Rs. 10

each, on which Rs. 9 per share had been called ; holders of 2,000 shares had, however, only paid Rs. 8 per share, while holders of 4,000 shares had paid up the full Rs. 10 in advance of calls. Assuming that the Preference Shares have now prior rights as to Capital, show, in the form of Liquidator's Account of Receipts and Payments, how you would divide the available balance among the shareholders, assuming that the costs of the winding up amount to Rs. 2,000, and that the calls in arrear are duly collected.

9. (a) What is a 'Statement of Affairs' in bankruptcy? In what does it differ from a Balance Sheet?

(b) Prepare Statement of Affairs on the 31st March, 1934, of Rakshit from the following particulars:—

	Rs.
Unsecured Creditors	2,00,000
Creditors fully secured ,	6,000
Property held by Secured Creditors	12,000
Creditors for Rates, Taxes, and Wages (Preferential)	300
Bills of Exchange (Good)	220
Book Debts	27,000
(Good, Rs. 1,000 ; Doubtful, Rs. 25,000, will produce Rs. 2,000 ; Remainder Bad)	
Property	56,000
Loans on Mortgage (produce Rs. 60,000)	1,70,000
Office Furniture	100
Cash	1,000

SECOND PAPER

Examiner—MR. NARESHCHANDRA CHAKRABARTI, M.A.

(Incorporated Accountant).

Questions 5, 9, 10, and ANY FOUR other questions carry full marks.

1. (a) What are the principal objects of an Audit?

(b) State briefly the difference in principle between the audit of the accounts of a private partnership and that of the accounts of a limited company.

2. State in detail the work involved in a complete and efficient audit of the Cash Book of a manufacturing business.

3. (a) What do you understand by 'the Verification of Assets' and what are the objects of the same?

(b) What are 'Fixed' and 'Floating' Assets and upon what basis should they respectively be valued for Balance Sheet purposes?

(c) What are the auditor's responsibilities as regards the valuation of assets?

4. State briefly how you would verify the following, and also what evidence you would require, as auditor, of the values of these assets in a limited company's Balance Sheet: (a) Freehold Land and Premises, (b) Fixed and Loose Plant, (c) Government Securities and Municipal and Port Trust Debentures, (d) Goods on Consignment, (e) Cash in hand, (f) Shares in Joint-Stock Companies.

5. (a) In the event of an auditor being of opinion that the provision for depreciation was insufficient, what course should he adopt?

(b) Having suggested the necessity of a provision for Depreciation of Machinery in the accounts of each of three companies, the respective boards of Directors raise objection on the following grounds respectively:—

- (i) The cost of similar machinery having risen, nothing should be written off, as it is actually more valuable ;
- (ii) Repairs done have fully maintained the machinery, which is as good as new ;
- (iii) To charge depreciation to the same extent as in a good year would prevent the declaration of a dividend, with the result of dissatisfaction amongst the shareholders and a possible fall in the price of shares.

Criticize these arguments.

6. (a) Set out the powers and duties of auditors under the Indian Companies Act, 1913, and the directions contained therein with regard to the Auditor's Report.

(b) Having completed the audit of a company's Balance Sheet, and having found everything in order, give a copy of your report to the shareholders in accordance with the Companies Act.

(c) In respect of what additional points has an auditor to report or certify in connection with the accounts of a Life Assurance Company?

7. In what way does the omission of liabilities affect—

- (a) The Profit and Loss Account,
- (b) The Balance Sheet?

8. In examining a List of Debtors and Creditors with the Ledger Accounts for the purposes of a Balance Sheet, to what features of each account should you pay attention, apart from the mere arithmetical correctness of the extractions? Give examples of error or fraud which may be detected in this process.

9. (a) It is often stated that 'Dividends have been paid out of Capital'. What is meant by this statement, and how can dividends be so paid out of Capital?

(b) Are there any provisions in the Indian Companies Act, 1913, by which the payment of Dividend out of Capital is prohibited or permitted? Briefly state the provisions.

10. (a) What are divisible profits of a company?

(b) Is a company bound to replace lost capital out of revenue before it can declare dividends? State fully the reason for your answer.

(c) Are capital profits available for distribution as dividend?

BANKING AND CURRENCY**FIRST PAPER**

Examiner—DR. B. RAMCHANDRA RAU, M.A., PH.D.

The questions are of equal value.

Answer ANY SIX questions.

1. Show how loans of banks make the deposits of banks. What factors determine the limits to which this process of creation of deposits can be carried?
 2. Examine the component elements of a well-developed Discount market, and indicate the value of such a market to the banking system of a country.
 3. What tests would you employ for appraising a bank's strength when you are going through its balance-sheet?
 4. Discuss the connection between (a) the Imperial Bank rate, (b) the Bazar hundi rate, and (c) the rate paid by other banks on deposits.
 5. What formalities are necessary in opening a bank-account? What is the difference between a Deposit Account and a Current Account with a bank?
 6. Distinguish between D/A and D/P bills. Why is it that the Indian merchants who import from abroad have very often to do so on D/P terms?
 7. Discuss the importance of the Discount policy as regards the regulation of foreign exchanges and the protection of reserves.
 8. Examine the necessity and the proper means of linking up the indigenous bankers of India with the general banking system.
 9. Compare the different ways in which banks help to finance industry under the British and the Continental banking systems.
 10. Discuss the functions of the English Joint-Stock Banks and their importance in the London money market.
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SECOND PAPER

Examiner—MR. G. FINDLAY-SHIRRAS, M.A.

The questions are of equal value.

Answer FIVE questions only.

1. Clearly explain the quantity theory of money, and explain the views of Cannan and Irving Fisher on this question.
2. Explain what you understand by Gresham's Law. How do you account for the facts that (i) standard and token coins, and (ii) metallic and paper money, circulate side by side?
3. What do you understand by Bimetallism? Under what conditions is it likely to succeed? Give your reasons.

4. How has the Bank Charter Act been changed after the war, and what changes have been effected with regard to the right of note issue by the Bank of England?

5. Explain clearly the effects of inflation and deflation of the currency of a country upon the different classes of its people.

How far do you think the method of meeting the trade depression, by an inflation of currency, is likely to succeed?

6. Briefly describe the 'gold exchange standard' as it obtained in India up to the outbreak of the Great War, and clearly explain the machinery which made the market rate of exchange conform to the official rate in normal times.

7. How do you account for the breakdown of the pre-war ratio of $\text{Rs} = 16d.$ and the post-war ratio of $\text{Rs} = 24d.$ gold?

8. When England went off the gold standard the rupee was linked to sterling and it has been kept practically steady at $18d.$ Would it have been better for India if the rupee had been kept steady at $18d.$ gold?

Give your reasons.

ECONOMICS OF TRANSPORT

FIRST PAPER

Examiner—MR. HARIDAS GHOSH, M.A.

The questions are of equal value.

Answer ANY FIVE of the following questions.

1. Discuss the practicability of a unified control of transport in the city of Calcutta.

2. Describe in broad outline the systems of transport available in the province of Bengal.

3. 'Transport Companies are partaking more and more of the character of a State enterprise.' Comment on this quotation.

4. Discuss the advantages and disadvantages of establishing in India a Rates Tribunal similar to that existing in Great Britain.

5. Discuss fully the meaning of the expression 'charging what the traffic will bear.'

6. 'Fixing a railway rate is, in one word, an art not a science. . . .' Comment on this statement.

7. 'The effect of railway expansion upon the economic life of India has been particularly great owing to the paucity of her waterways and ports and the regularity of her coast line.' Comment on this quotation.

8. Indicate in a general way some of the directions in which a railway administration might expect to effect economies in working expenses during an extended period of reduced passenger and goods traffic.

SECOND PAPER .

Examiner—MR. J. MAJUMDAR, M.A.

The questions are of equal value.

Answer ANY FIVE of the following questions.

1. Discuss the limitations to the application of the Law of Increasing Returns to railways.
 2. Show clearly how protection to a country's industries can be given through railway rates.
 3. Discuss fully the advantages and disadvantages of pooling of wagons by the various railways in India.
 4. Describe the present organization for control of railways in India. Also examine the changes that are being proposed at present.
 5. Discuss the factors that influence classification of goods by railways.
 6. Examine the possible reasons for granting special rates to certain specified traffic between particular stations.
 7. Discuss the railway financing policy of the Government of India.
 8. Write notes on:—
 - (a) Undue Preference.
 - (b) English Domiciled Companies.
 - (c) Owners' Risk Rates.
-

PUBLIC ADMINISTRATION

FIRST PAPER

Examiner—MR. PRAMATHANATH BANERJEE, M.A., B.L., BARRISTER-AT-LAW.

Attempt only SIX questions.

The questions are of equal value.

1. What is the position of an Indian in the constitutions of (i) the Union of South Africa, (ii) New Zealand, (iii) Australia?
2. How far is it true to say that the Parliaments of the Dominions are not in any sense delegates of the Imperial Parliament?
3. How far do the Dominions enjoy the power of making treaties?
4. 'The Crown is the supreme authority in the British Empire' and is the symbol of its unity.' (*Jenks.*) Discuss.
5. What do you understand by the expression 'ministerial responsibility' in England? Do we have 'ministerial responsibility' in India?
6. Distinguish between:—
 - (a) Private Acts and Public Acts in England.
 - (b) Dissolution of Parliament and its Prorogation.
 - (c) Impeachment and Attainder.

7. What are the functions of *any three* of the following?—

- (a) the Committee of Imperial Defence ;
- (b) the Chancellor of the Exchequer ;
- (c) the Auditor-General in England ;
- (d) the 'Home' Secretary ;
- (e) the Board of Trade in England.

8. The Judicial Committee of the Privy Council is not an English tribunal at all It is a tribunal however of a distinctly imperial character.' (*Jenks.*)

9. How does the House of Commons in England control the purse?

10. How far does Parliament reflect public opinion in England?

SECOND PAPER

Examiner—MR. HARIHAR DHAR, M.A.

Answer SIX questions only. You are marked for quality, not quantity.

The questions are of equal value.

1. Discuss recent developments in the evolution *either* of the Cabinet, *or* of the office of the Prime Minister.

2. 'The White Paper has recognized the financial injustice done to Bengal and has advanced proposals to undo that injustice.' Discuss.

3. How has the question of communal representation been tackled by the (1) Simon Commission Report, and (2) the Communal Award of His Majesty's Government in England? Have you any suggestions to offer?

4. Give a brief account of the respective functions and mutual relations of the Viceroy and the Secretary of State for India.

5. On what principles has the composition of the Federal Assembly been determined by the Simon Commission Report? Do you consider the scheme satisfactory?

6. 'Both in respect of finance and administration, the Central legislature of India to-day plays practically the same rôle of critic and adviser as the Indian Legislative Council used to do under the Morley-Minto Reforms.' Discuss.

7. What are the arguments for and against establishing Second Chambers in the provinces? What substitute is envisaged by the Simon Commission Report in case Second Chambers are not established in the provinces?

8. Clearly state the difficulties which the adoption of the idea of Federation in the new constitution would involve.

9. How far is Dominion and Colonial legislation controlled by the Imperial Government? State clearly the limits of Dominion and Colonial legislation.

10. 'The White Paper has frankly introduced safeguards; administrative, financial, and commercial, that reduce to a shadow the little substance of responsibility left in the proposed constitution.' How far is this criticism just?

MODERN ECONOMIC HISTORY

FIRST PAPER

Examiner—DR. ROHINIMOHAN CHAUDHURI, M.A., PH.D.

The questions are of equal value.

Answer ANY SIX questions.

1. Describe the salient features of the guild system. To what factors can its decline be attributed?
2. 'The administration of Burleigh constituted the high watermark in England of efficient direction by the central government of the economic growth of the nation.' Comment on this statement.
3. Trace the growth of the Lancashire cotton industry. What were the factors that particularly helped the development of this industry down to the outbreak of the European War?
4. Indicate the circumstances that led to the passing of the Bank Charter Act of 1844. Why and in what respects were the provisions of that Act modified in 1928?
5. Discuss the leading phases of the British Trade Union movement during 1800—1875.
6. 'Men have drifted steadily during the past thirty years towards an almost Elizabethan confidence in the beneficial results of State control and intervention.' Indicate the directions in which State control has been prominent in Great Britain.
7. Discuss the influence of the free trade movement upon British trade during the nineteenth century. Accountant for the rise of the protectionist reaction in recent years.
8. What were the chief obstacles to the development of British agriculture before 1760? Discuss briefly the measures that were adopted to overcome those obstacles?
9. Comment on the different methods adopted by Great Britain to finance the last European War.

SECOND PAPER

Examiner—DR. JOGISCHANDRA SINHA, M.A., PH.D.

The questions are of equal value.

Answer ANY SIX questions.

1. Enumerate the various causes which led to the gradual decline of towns in India. Illustrate your answer by actual examples.
2. What were the handicaps in the way of a rapid industrial development of India within recent times? How far have such obstacles been now removed?

3. Describe briefly the factors which gradually pushed up the Indian exchange from 1s. 5d. in August, 1917, to 2s. 4d. in April, 1920. Explain, in this connection, the steps taken by the Government of India to meet the situation.

4. How were the conditions of mining labour in India improved by the Mines Act of 1922? In this connection, can you justify the total prohibition of women working in the mines underground?

5. Give the main characteristics of industrial labour in India. How do you explain the fact that some of the major industries of India have so far failed to attract and to retain a permanent labour supply for themselves.

6. Discuss the evils of the expropriation of the peasantry by the moneylender, and state what remedial measures have been adopted by the Government in different parts of India to meet the situation.

7. Account for the present difficulties of the Cotton Industry in India. How far do you think it has reached the limit of its expansion?

8. Give a brief account of the growth of the Co-operative Movement in India. How do you account for the uneven and one-sided development of the movement in the country?

9. Classify the irrigation works in India, and explain the great benefits of irrigation in an agricultural country like India.

10. What were the causes that led to the gradual decay of the old Indian handicrafts? How has the decay affected the economic life of the country?

Licentiate in Teaching Examination

1934

THE PRINCIPLES OF EDUCATION

Examiner—MR. S. P. BISWAS, M.A.

FIRST PAPER

The questions are of equal value.

Answer ANY FIVE of the following questions.

1. 'It is training and education that lead to the higher and more complex *neuron* connections, and place man far above the level of the beast.'

Discuss the above, explaining the mechanism and laws of neuron connections.

2. State some of the ways in which learning takes place. Are there any limits to the amount of knowledge that can be learned? What factors govern the rate of learning?

3. 'The teacher who meets with most success is the teacher whose own ways are the most imitable.' Explain it carefully, indicating the nature and uses of imitation in education.

4. Define attention. What are the different determinants of attention? How would you help your pupils to cultivate voluntary attention?

5. Write notes on the following, laying special stress on their educational value:—

- (a) Curiosity.
- (b) Interest.
- (c) Habit.

6. Is the control of emotions necessary for the education of children? What is the meaning of the characteristic emotional reactions? How would you cure the children who gave way to fits of anger, and who cry readily?

7. Discuss why the training of imagination should constitute one of the most important aims of education. How would you stimulate the imagination of a child who does not seem to picture or make real the descriptions in reading, geography, etc.?

8. Does training or discipline acquired in one branch of learning carry over other branches, both similar and diverse? If so, what are the extent and the mechanism of transfer?

9. Show how far mental ability has a tendency to run in family strains. In this connection, discuss whether morality is a matter of inheritance, or is dependent upon environment and training.

METHOD OF TEACHING AND SCHOOL ADMINISTRATION—FIRST PAPER

Examiner—MR. KSHETRAPALDAS GHOSH, B.A. (Cal.), B.A. (Oxon.).

SECOND PAPER

The questions are of equal value.

ANSWER ANY FIVE questions. You are marked for quality,
not quantity.

1. Draw up a time-table for Class III of your school, and assign reasons for your scheme.
2. Suppose you are the Headmaster or Headmistress of your school: what would you do to make the school run efficiently?
3. The Inspector of Schools will visit your school: what records and papers would you keep ready for his inspection?
4. 'Libraries are seldom used.' What would you do to rectify this state of things with regard to the school library? Suggest a plan whereby boys' and girls' reading might be guided and controlled by members of the staff.
5. What opportunities for self-government are you prepared to allow your students? What forms would you like this self-government to take? Draw up a suitable scheme.
6. What is meant by the 'tone' of a school? Analyze its constituent elements, and show what you would do to develop it in your school.
7. Are you in favour of imparting religious education in school? What form or forms would it take? Give reasons for your answer.

METHOD OF TEACHING AND SCHOOL ADMINISTRATION—SECOND PAPER

Examiner—SRIMATI SUNITIBALA GUPTA, B.T., M.ED.

THIRD PAPER

The questions are of equal value.

1. Discuss the problem of co-education in an Elementary School, a Middle School, and a Secondary School, with special reference to (a) social, (b) economical, (c) psychological, and (d) disciplinary, sides of the question.
2. If the aim of education is the attainment of an all round development of all the dormant possibilities of a child, what, according to your judgment, should be included in the curriculum?

3. Justify or criticize the statement, 'the State should be content with a plan of limited supervision, which will, if wisely used, stimulate and guide private effort and secure for parents a certain guarantee of efficiency, but which will not trench upon any man's freedom, nor secure to public schools a monopoly which might be prejudicial to ultimate progress'.

4. (a) Should the syllabus of Hygiene be the same for the girls and the boys between 12 and 16?

(b) Write out a Lesson Form for one of the following class subjects:—

(i) Personal Hygiene—Class III (8th class).

(ii) Domestic Hygiene—Class VII (4th class).

5. What is the best way of teaching English to an Indian child aged 8 years? What part does Grammar play? years? What part does Grammar play?

Or,

How would you teach English Alphabets to children? Has 'Project Method' been successful in India?

6. Write Lesson Notes on *any one* of the following subjects:—

(a) Any important historical event. Class VI (5th class).

N.B.—Teacher should speak as little as possible.

(b) Vernacular Poetry (for appreciation). Class VIII (3rd class).

N.B.—'Dalton Plan' to be followed as far as practicable.

(c) Vernacular Prose (for matter). Class VII (4th class).

(d) Simple Interest.

Or,

Any two sides of a triangle are together greater than the third side.

Choose your own class.

(e) Earthquake and its after-effects in a country which is mostly

(i) agricultural, (ii) industrial.

Choose your own class.

(f) Common flowers in Bengal. Class III (8th class).

(g) Classical Grammar. Class IX (2nd class).

N.B.—Inductive Method to be used.

7. What is the difference between a 'normal child' and a 'difficult child'? Should they both be put in the same section? Suppose both of them tell a lie, how would you deal with them?

Or,

How far has 'guidance by team-work' been successful in the case of 'difficult' children?

HISTORY OF EDUCATION

Examiner—MR. GANGACHARAN DASGUPTA, B.A., B.T.

FOURTH PAPER.

The questions are of equal value.

Answer FOUR questions, TWO from EACH group.

GROUP A

1. Describe very briefly the merits and defects of the Monitorial systems of Bell and Lancaster. Do you expect any advantage if the system be introduced in Bengal schools?
2. In what ways did the teaching of Pestalozzi colour the history of educational practice in England? Give examples of Pestalozzian influence.
3. Discuss in a very general manner how, with the progress of civilization, the theory and practice of education have changed.
4. What are the chief characteristics of modern education? Narrate very briefly how the idea of mass education originated in England.

GROUP B

1. Give a brief historical sketch of the attempts made to introduce free, compulsory primary education in Bengal in the course of the last 30 years.
2. Discuss the main administrative provisions of the Bengal Rural Primary Education Act of 1930.
3. Give a very short sketch of the systems of indigenous education in ancient India. What light do they throw on the improvement of education in modern times?
4. Describe one of the educational experiments of rural reconstruction associated with any one of the following institutions:—
(a) Shantiniketan ; (b) the School at Moga ; (c) the School at Ushagram.

ENGLISH COMPOSITION

Examiner—DR. SUHRITCHANDRA MITRA, M.A., D. PHIL.

FIFTH PAPER

The figures in the margin indicate full marks.

1. Translate one of the following passages into English :— 25

(a) কোনও এক সময়ে একজন ভারতবাসী ইংলণ্ডে যাইয়া ডোভার ষ্টেশনে নামিতেই সামান্য একটা ব্যাগ বহন করিবার নিমিত্ত ‘কুলি চাই’ বলিয়া

হাঁকিতে লাগিলেন ; তখন একজন বলিষ্ঠ যুবা পুরুষ তাঁহার নিকটে আসিয়া মূল্য নির্ধারণ করতঃ ব্যাগটা হস্তে লইয়া ভারতবাসীর পশ্চাদহসরণ করিতে লাগিল। কিয়দূর গমনের পর কুলি জিজ্ঞাসা করিল, “মহাশয়, বলিতে পারেন পার্লিয়ামেন্টের অমুক বিলের কি হইয়াছে?” কুলির বাক্য শ্রবণ করিয়া ভারতবাসী বিস্মিত হইয়া জিজ্ঞাসা করিলেন, “তোমার তাহাতে কি প্রয়োজন? তুমি কি পর্য্যন্ত লেখাপড়া করিয়াছ?” তদুত্তরে কুলি বলিল, “আমি লণ্ডন বিশ্ববিদ্যালয়ে এম্ এ পাশ করিয়াছি।” এই কথা শুনিবামাত্রই ভারতবাসী কিঞ্চিৎ অপ্রতিভ হইয়া তন্নিয়েজিত কুলির হস্ত হইতে ব্যাগটা গ্রহণ করিতে উদ্যত হইলেন। তখন কুলি বলিল, “সে কি? আমি কি ইহা বহন করিতে অসমর্থ?” ভারতবাসী তদুত্তরে বলিলেন, “আপনি এম্ এ পাশ করিয়া এই নীচ কাজ করিবেন কেন?” তখন কুলি বলিল, “আমাদের নিকট ইহা নীচ কাজ নহে। স্বীয় পরিশ্রমলব্ধ সদমুষ্টিত অর্থ আমাদের নিকট শ্রাব্য সামগ্রী।”

(b) প্রায় দুইশত পঞ্চাশ বৎসর পূর্বে একদিন মাঘ মাসের রাত্রিশেষে একখানি যাত্রীর নৌকা গঙ্গাসাগর হইতে প্রত্যাগমন করিতেছিল। পৰ্ণুগীস ও অন্যান্য নাবিক দম্ভাদিগের ভয়ে যাত্রীর নৌকা দলবদ্ধ হইয়া যাতায়াত করাই তৎকালের প্রথা ছিল; কিন্তু এই নৌকারোহীরা সঙ্গীহীন। তাহার কারণ এই যে, রাত্রিশেষে ঘোরতর কুষ্টি দিগন্ত ব্যাপ্ত করিয়াছিল; নাবিকেরা দিক্ নিরূপণ করিতে না পারিয়া বহর হইতে দূরে পড়িয়াছিল। এক্ষণে কোনদিকে কোথায় যাইতেছে, তাহার কিছুই নিশ্চয়তা ছিল না। নৌকা-রোহিণীগণ অনেকেই নিদ্রা যাইতেছিলেন। একজন প্রাচীন ও একজন যুবা পুরুষ এই দুইজন মাত্র জাগ্রত অবস্থায় ছিলেন। প্রাচীন যুবকের সহিত কথোপকথন করিতেছিলেন। বারেক কথাবার্তা স্থগিত করিয়া বৃদ্ধ নাবিকদিগকে জিজ্ঞাসা করিলেন, “মাঝি, আজ আর কতদূর যেতে পারবি?” মাঝি কিছু ইতঃশুভ করিয়া বলিল, “বলিতে পারিলাম না।” বৃদ্ধ ক্রুদ্ধ হইয়া মাঝিকে তিরস্কার করিতে লাগিলেন।

Or,

Give the substance of *any one* of the following passages:—

(a) Prosperity and success of themselves do not confer happiness; indeed, it not frequently happens that the least successful in life have the greatest share of true joy in it. No man could have been more successful than Goethe, possessed of splendid health, power, honour, and

sufficiency of this world's goods—and yet he confessed that he had not, in the course of his life, enjoyed five weeks of genuine pleasure. So the Khalif Abdul Rahman, in surveying his successful reign of fifty years, found that he had enjoyed only fourteen days of pure and genuine happiness. After this, might it not be said that the pursuit of mere happiness is an illusion?

(b) Mere money is no indication of prosperity. A man's nature may remain the same. It may even grow more stunted and deformed, while he is doubling his expenditure, or adding cent. per cent. to his hoards yearly. It is the same with the mass. The increase of their gains may merely furnish them with increased means for gratifying animal indulgences, unless their moral character keeps pace with their physical advancement. Double the gains of an uneducated, overworked man, in a time of prosperity, and what is the result? Simply that you have furnished him with the means of eating and drinking more! Thus, not even the material well-being of the population is secured by that condition of things which is defined by the political economists as 'National Prosperity' and so long as the moral elements of the question are ignored, this kind of 'prosperity' is, we believe, calculated to produce far more mischievous results than good. It is knowledge and virtue alone that can confer dignity on a man's life; and the growth of such qualities in a nation are the only true marks of its real prosperity; not the infinite manufacture and sale of cotton prints, toys, hardware, and crockery.

2. Give in simple prose the sense of *any one* of the following:— 12

(a) Blow, blow, thou winter wind,
Thou art not so unkind
As man's ingratitude;
Thy tooth is not so keen,
Because thou art not seen,
Although thy breath be rude.

(b) By birth name alone descends;
Your honour on yourself depends;
Think not a coronet can hide
Assuming ignorance and pride;
Learning by study must be won,
'Twas ne'er entailed from son to son,
If you degenerate from your race,
Their merits heighten your disgrace.

3. Punctuate the following:—

8

what will you do there asked his mother I will become famous replied the boy who certainly was ambitious and expected to do great things people have at first to go through a great deal of trouble she said and then they became famous.

4. Frame sentences to illustrate the difference in meaning between *any five* of the following pairs:—

Principal and principle; site and cite; hung and hanged; human and humane; set out and outset; turn out and outturn; start up and upstart; cast down and downcast.

5

Or,

Complete the following sentences by inserting one word in each of the blank spaces:—

- (a) This stick differs—that—length—two feet.
- (b) The difference—six and eight is equal to the excess of four —two.
- (c) He is indifferent alike—praise and blame.
- (d) He is so bent—carrying—his purpose—it is useless to try to dissuade him—doing so.

5. Write an essay on *any one* of the following subjects:— 25

- (a) Education of women.
- (b) One touch of Nature makes the whole world kin.
- (c) Life and activities of an Indian Patriot.
- (d) Industry is the mother of success.
- (e) Town life *vs.* village life.

6. Select *any one* of the following topics, and write an essay on it:— 25

- (a) One crowded hour of glorious life
Is worth an age without a name.
 - (b) The League of Nations.
 - (c) Peace hath its victories no less renowned than war.
 - (d) Dignity of Labour.
 - (e) The training of the child.
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Bachelor of Teaching Examination

1934

FIRST PAPER

PRINCIPLES OF EDUCATION

Examiner—MR. J. M. SEN, M.ED. (Leeds), B.Sc.

The questions are of equal value.

Attempt ANY SIX questions.

1. What according to your view should be the aims and methods of education? In this connection discuss the views of any one of the following educationists: (1) Nunn, (2) Henderson, (3) Meredith.

2. What is the hormic theory of mind? Who first suggested the term? How does the hormic view explain the rôle of *either* of (1) purpose and motivation, *or* of (2) volition and conation, in the formation of character?

3. Discuss fully the psychology of imitation.

4. How does (1) curiosity differ from inquisitiveness; *or* (2) collecting from hoarding; *or* (3) teasing from bullying? In this connection discuss the importance of the theory of instinct for all school teachers.

5. Does memory depend on training in perception? What sort of training is useful to improve perception? What light can it throw on the character of children's lies?

6. Describe the relation between attention and interest, and shew how fundamental they are in all mental processes.

7. Why do not psychologists agree as to the meaning of the words 'character' and 'personality'? What is an integrated personality? What is multiple personality? Explain how a phobia may develop in a young student.

8. What are the advantages of rewards and punishments as means to character training?

— — — —

SECOND PAPER

PRINCIPLES OF EDUCATION

Examiner—MR. SATYANANDA RAY, M.A., B.D., PH.D.

The questions are of equal value.

Attempt ANY SIX questions.

1. Discuss the statement:—

- (a) 'Somehow the school always remains aloof from real life, and is generally in direct antithesis to it.'

Or,

- (b) 'For our schools to refuse to become places where real living can thus go on is nothing less than for our society to commit moral suicide.'

2. Give certain concrete examples of habit. What is the distinction between habit and skill? How are habits formed? Can there be a group of habits for every school subject?

3. What are the characteristics of a good serviceable memory? Can memory function be improved? In what sense is memory fundamental to imagination?

4. What is the proper treatment for a pupil who fears that he will be failure in his school work?

5. Outline the stages of reasoning involved in the solution of a particular problem. What is rationalization? Describe some of its forms used by school teachers.

6. What relation has fatigue with the subjects taught in school? Distinguish between fatigue and boredom.

7. Madame Montessori asserts that fairy stories are bad for children. Argue for and against this statement. Justify or oppose it fully. In the light of your knowledge of sensory and motor development what criticism have you of the Montessori method?

8. Compare the values of standardized or unstandardized (informal) tests of achievements.

THE CONTENTS AND METHODS OF TEACHING SELECTED SUBJECTS AND SCHOOL MANAGEMENT—FIRST PAPER

THIRD PAPER

Examiner—KHAN BAHADUR TASADDUQ AHMAD, B.A., B.T., M.ED.

Select ANY THREE subjects. Be brief and answer to the point.

Illustrate important statements by concrete examples.

The questions are of equal value.

English

Answer two questions only.

1. How can you easily detect mistakes in the English pronunciation of a boy? Describe your method of correcting the mistakes, particularly in those sounds which offer special difficulty.

2. Give the titles of three English poems suitable for Class IX with the names of their authors. Select one of these poems for a lesson, and describe its theme. State the aim of your lesson, and indicate the method of treatment of the poem in class.

3. What devices would you use to enrich your pupils' English vocabulary?

Bengali

Answer two questions only.

1. Name three well-known writers of short stories from which a selection may be made for Classes IX and X. Give the titles of three stories. Describe briefly the plot, and indicate your method of treatment of one of the stories in class.

2. Prepare a scheme of lessons on 'Sandhis', and describe your method of teaching 'Sandhis'.

3. Prepare full teaching notes for the elucidation of the following extract in Class VII:—

দানধর্মের প্রশংসায় যদি অমিতব্যয়িতা বাড়িয়া যায়, তবে দান করিতে সমর্থ এমন লোকের সংখ্যা ক্রমেই ন্যূন হইয়া যায়। আত্মসংযম, ভবিষ্যদর্শন, উপায়োদ্ভাবন প্রভৃতি অনেকানেক উন্নত শক্তির খর্ব্বতা হইয়া পড়ে। ক্লপণ-দিগের অনেক দুঃখ অনেক দোষ ঘটে; কিন্তু তাহারা প্রায়ই সংযতচারী, অবিলাসী এবং বাঙ্‌নিষ্ঠ হয়। পক্ষান্তরে প'রচে লোকেরা প্রায়ই বিলাসী ও অনেক স্থলে অনৃতবাদী হইয়া পড়ে। যে সমাজে শক্তি সঞ্চারের প্রয়োজন, তাহাতে ক্লপণ লোকের সংখ্যা বৃদ্ধি ভাল, খ'রচে লোকের সংখ্যা বৃদ্ধি ভাল নয়।

History*Answer two questions only.*

1. Draw up a scheme of ten lessons on Indian History from 1707 to 1761.
2. What are the original sources of Indian history? How would you get boys to take an interest in and use these sources?
3. Prepare notes of a lesson for Class IX on *one* of the following topics:—
 - (i) Downfall of the Pathan Empire, (ii) The League of Nations, (iii) Administration of Justice in British India.

Geography*Answer two questions only.*

1. Draw a physical map of India. Describe some devices you would use for giving boys an idea of the relief of a country?
2. Prepare notes of a lesson for Class VII on *one* of the following subjects:—
 - (i) Trade Winds, (ii) Distribution of Wheat and Cotton in India, (iii) Manufactures of India.
3. What apparatuses are necessary for preparing a weather chart in a school? How would you get the boys to use the apparatus? Describe one piece of apparatus giving a sketch.

Mathematics*Answer two questions only.*

1. In what class would you introduce decimals? Prepare a scheme of work on decimals for that class.
2. Examine the relative importance of memorizing and reasoning in the study of mathematics at school. Illustrate your answer by giving examples.
3. Prepare a scheme of work on the identity of two triangles, and indicate your method of treatment.

Science*Answer two questions only.*

1. Describe the 'Heuristic Method'. How far can you use it in the teaching of science in a school?
2. Prepare notes of a lesson for Class VIII on physical and chemical changes. Previous knowledge—knowledge of such changes without knowing anything about classification.
3. Draw up notes of a lesson, on 'The atmospheric pressure', for Class VII.

Hygiene

Answer TWO questions only.

1. Suggest an ideal dietary, stating the underlying principles for adolescent boys who devote considerable time to intellectual work.
2. Suggest requisite equipment for teaching hygiene in a high school.
3. Give the names and symptoms of three infectious diseases which a hostel superintendent ought to be on the look-out for?

The Kindergarten System

Answer Question 3 and ANOTHER question.

1. Describe the equipment of a Kindergarten School.
2. State the principles underlying the 'Kindergarten'.
3. What is the place of story-telling in the 'Kindergarten'? Suggest occupations for the lowest class of a 'Kindergarten'.

Primary School Subjects

Answer TWO questions only.

1. It is said that Primary Education in Bengal does not produce permanent literacy. What are the causes? How would you remove them?
2. What points would you bear in mind in judging the efficiency of a primary school?
3. Draw up the curriculum of a three class primary school.

Nature Study

Answer TWO questions only.

1. What devices can a teacher adopt to get children to take an intelligent and active interest in the plant and animal life of the neighbourhood?
 2. Suggest a scheme of work on the study of the seasons in Bengal, indicating clearly the work of the teacher and that of the children.
 3. What is the relation between Science and Nature Study? Illustrate your answer by showing the difference in the method of treatment of a particular topic in a Nature Study class and a Science class respectively.
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THE CONTENTS AND METHODS OF TEACHING SELECTED SUBJECTS AND SCHOOL MANAGEMENT—SECOND PAPER

FOURTH PAPER

Examiner—RAI SAHEB MANORANJAN MITRA, B.A., B.T.

Be brief and answer to the point.

The questions are of equal value.

Attempt FIVE questions only.

1. Name some extra-curricular activities suitable for school children in Bengal. Why and how should you encourage and foster them? Illustrate your answer by reference to certain definite activities.
 2. Describe the factors which go to make the school an educative force.
 3. Compare the relative values of group-work, individual work, and the work of the class as a whole. How would you provide for each type of work in connection with the teaching of geography, history, or science in Class VII?
 4. Draw up a year's scheme of physical exercise and games for Classes III and IV of a high school.
 5. Distinguish between educational handwork and technical education. Suggest some educational handwork for Class VI in connection with the teaching of a particular topic in history, geography, or science.
 6. Describe the constitution, function, and the utility of the University Arbitration Board.
 7. What are the different controlling agencies of secondary education in Bengal? What are their respective functions? How does this multiplicity of control secure or militate against efficiency?
 8. Write a short essay on 'Discipline and how to secure it in a school'.
 9. What are the common causes of retardation of progress in school children? Suggest remedies.
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HISTORY OF EDUCATION

FIFTH PAPER

Examiner—MR. CHINTAHARAN CHAKRABARTI, M.A.

The questions are of equal value.

Only SIX questions are to be attempted. FOUR should be selected from Group I and TWO from Group II.

GROUP I

1. How can a teacher profit by a study of the History of Education? Illustrate your answer by examples.

2. Give a critical account of the ideals and methods of education among the Hindus in ancient India with special reference to the relation between the teacher and the student.
3. Compare and contrast the Spartan and the Athenian systems of education in ancient Greece. What were the elements of permanent education value in them?
4. Give a general account of the contribution of Islam to the promotion of learning in Europe and Asia in the Middle Ages.
5. State the fundamental principles of education enunciated by Rousseau or Spencer. What drawbacks do you notice in them?
6. Consider Froebel's position as a reformer of education. Compare his methods of sense-training with those of Dr. Montessori.

GROUP II

7. Describe the present organisation of education in England with special reference to the steps taken after the Great War to further the cause of education on national lines.
8. State the broad features of education in the United States of America, and show how they are the outcome of the democratic ideals of her people.
9. Examine the following aspects of education in the secondary schools of India in the light of what is attempted in these respects in the secondary schools of England and America:—
 - (a) Preparation of students for life.
 - (b) Training of students for citizenship.
 - (c) Religious instruction.

ENGLISH COMPOSITION

SIXTH PAPER

Examiner—MR. KSHETRAPALDAS GHOSH, B.A.

The figures in the margin indicate full marks.

1. Express in your own words the substance of *one* of the passages:— 25

(a) My own views on Tennyson—the views I held as a child, the views I held at school and at the University, or in the period when I did not think of Tennyson at all, or in the recent period when I have read and re-read him carefully—have undergone the most conflicting developments. Of late I have read the poems as a whole, and have experienced curious fluctuations of opinion. I also have been through the phase of thinking him perfect in form and deficient in emotion; I have passed from that to feeling that his form was a mere mannerism, a trick of alliteration, onomatopœia, and the like, and that it was his thought and purpose which, however much we might disagree with them, were the essential Tennyson; I have traversed a stage of thinking that the early poems were excellent and the later poems very bad indeed—there were moments when I felt that a few cantos in *In Memoriam* and the songs in *The Princess* were his only claims to immortality—and

I have emerged with a very deep admiration for the great muscular mass of it all, for the sheer efficiency of style ; and with a conviction that if one could separate the two Tennysons—the prosperous Isle-of-Wight Victorian from the black, unhappy mystic of the Lincolnshire wolds—one would find in the former the secret of his preponderating and triumphant strength.

For Tennyson, if he survives at all, will survive in spite of, and not because of, the Tennyson legend, even as his poetry will survive in spite of the instructional and objective tenour which was forced upon it by the Victorians. Throughout his life and writings we can trace his sensitive poetic temperament struggling against the 'mission' and 'message' imposed upon it by the circumstances of his age.

(b) The mainspring and source of all fable and fiction that deal with famous events and persons of a past time are to be found in our immemorial anxiety to know, or at any rate to imagine, something of what happened in the old days ; and to revive, if possible, scenes and characters that played their part on the stage, now dark and silent, of the world long ago. Somehow the future, with all its bright promises for this world or another, is not, to many of us, so attractive as the past : we know nothing of what is to come, but though we know little more of what happened in far distant times, of that little we are always trying to collect and interpret what fragments can be picked up here or there. The remainder we supply by guesswork and imagination. It is this enquiry, this regretful looking back to the dim past, this delight in ancient legend and tradition, this fanciful guessing at what cannot be known, that nourished in old days the spirit of imaginative fable, just as it now stimulates the collection of folklore, the scrutiny of old records, and as it has sustained up to our own time the fading delight in Romance.

In an unlettered and primitive age men accepted as true and authentic everything that was handed down and repeated to them of the deeds of gods and heroes ; and thus the hazy atmosphere of the marvellous and miraculous obscures all early origins of race or religion, and clouds the beginnings of history. Soon the splendid visions which surround the youth of man begin to fade into the common daylight of growing civilization ; the standard of what is credible goes on changing ; we take fewer things for granted and demand more proof of them. Thus the dry land of authentic History emerges slowly out of the sea of Fable.

2. Summarize briefly the ideas in *one* of the following poems, bringing out its meaning and remarking on its qualities:— 25

(a) I laid me down upon the shore
And dreamed a little space ;
I heard the great waves break and roar ;
The sun was on my face.
My idle hands and fingers brown
Played with the pebbles grey ;
The waves came up, the waves went down,
Most thundering and gay.
The pebbles, they were smooth and round
And warm upon my hands,
Like little people I had found
Sitting among the sands.
The grains of sand so shining-small
Soft through my fingers ran ;
The sun shone down upon it all,
And so my dream began :

How all of this had been before ;
 How ages far away
 I lay on some forgotten shore
 As here I lie to-day.

The waves came shining up the sands,
 As here to-day they shine ;
 And in my pre-Palagian hands
 The sand was warm and fine.

I have forgotten whence I came,
 Or what my home might be,
 Or by what strange and savage name
 I called that thundering sea.

I only know the sun shone down
 As still it shines to-day,
 And in my fingers long and brown
 The little pebbles lay.

- (b) Heaven lies about us in our infancy!
 Shades of the prison-house begin to close
 Upon the growing Boy,
 But he beholds the light, and whence it flows,
 He sees it in his joy ;
 The Youth, who daily farther from the east
 Must travel, still is Nature's priest,
 And by the vision splendid
 Is on his way attended ;
 At length the Man perceives it die away,
 And fade into the light of common day.

. Write an essay on *one* of the following subjects:—

50

- (a) The problems of Secondary Education in Bengal.
 - (b) Co-education.
 - (c) Freedom in Education.
 - (d) Genius is an infinite capacity for taking pains.
 - (e) Unemployment in Bengal ; its causes and possible cures.
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DIPLOMA EXAMINATION IN SPOKEN ENGLISH

WRITTEN PAPER : PHONETICS

Examiners— { PROF. S. K. CHATTERJEE, M.A., D.LITT.
 MR. P. C. GHOSH, M.A.

The questions are of equal value. Answer six questions only.

1. Draw a sketch of the vocal organs, and indicate therein the following: the Teeth-ridge, the Soft Palate, the Pharynx, the Nasal Passage, the Epiglottis, and the Vocal chords.

Indicate also the position of the tongue in pronouncing the English 'dark l'.

2. Why are vowel sounds described as 'back', 'front', or 'central', and 'high', 'mid' or 'low'? Explain also the expressions 'rounded' and 'unrounded'.

Describe *three* of the following vowel sounds : [y, i, ü, ʊ, φ, æ.]

3. Explain fully the nature and formation of *five* of the following consonant sounds of English : [r, f, w, ʌ, ʃ, θ, h, j, z]. Mention two consonant sounds which are found in dialectal English but which do not occur in Standard English.

4. How would you describe a 'vowel', as differentiated from a 'consonant'? What are the essential things in the formation of a vowel sound? Give an account of the consonant sounds in English which can form syllables like vowels.

5. Discuss the nature of the *accent system* of English, and indicate, with illustrative examples, the behaviour of the English vowels in connexion with the accent.

6. Transcribe the following passage phonetically, using the alphabet of the *International Phonetic Association*, and indicating the pronunciation you are attempting to reproduce:—

'At an unknown, but fairly early date, perhaps towards the end of the 3rd millennium B.C., a tall, fair-haired people was making its way southward down the Vardar valley and, farther east, across the Dardanelles into Asia Minor. The more westerly section of this migration in time conquered and occupied that country which was afterwards known as Hellas, but is generally called by us Greece. There, the invaders, who probably were not very numerous and certainly were not under one central command, found a people whom they, at least in historical times, termed Pelasgians.'

7. Explain clearly the difference among—Bengali ঠ, English t, and Bengali ত; (ii) West Bengali ঠ, East Bengali ঠ, and English ch (soft). Illustrate the first part of your answer by means of a diagram of the inside of the mouth showing tongue-positions.

8. Comment phonetically on *four* of the following transcriptions : *Colonel* = কৰ্ণেল ; *college* = কলেজ ; *varnish* = বার্নিশ ; *number* = নম্বর ; *Counsel* = কৌশল ; *wood-pencil* = উটপেন্সিল ; *mail train* = মেইল ট্রেন ; *ear-ring* = ইয়ারিং ; *shirt* = শার্ট.

9. Explain *five* of the following terms with illustrative examples whenever required: *Pharyngeal Spirants*, *Affricates*, *Tones*, *Quantity of Vowels*, *Cardinal Vowels*, *Nasal Sounds*, *Lateral Sounds*, *Glottal Stop*, *Uvular Stop*, *Palatal Spirants*.

10. What are the advantages of *Phonetics* in the study and teaching of languages? How would you propose to utilize it in the teaching of English in India? Write a brief note on phonetic alphabets.

M. A. Examination

1934

ENGLISH

FIRST PAPER

FIRST HALF

Examiner—MR. SUHASCHANDRA RAY, M.A.

The figures in the margin indicate full marks.

GROUP A

Answer TWO questions only.

1. *Either,* 10
Give a brief account of Old English personal poetry. How far can it be called *lyrical*, in the accepted sense of the term?

Or,

Trace briefly the growth and development of Old English Prose Literature. 10

2. 'The origins of all the types of modern English literature can be traced back to the Middle English period.' Discuss and illustrate. 10

Or,

How did the Arthurian legend pass into medieval Romance? How far does medieval Romance reflect medieval life?

3. Write critical and historical notes on *any two* of the following:— 10

The Fight at Finnsburg, Genesis A and B, Elene, The Owl and the Nightingale, The House of Fame, Mandeville's Travels.

GROUP B

(For 'A' Group students only.)

Answer ANY TWO questions.

1. Illustrate the operation of Gradation (*Ablaut*) and Mutation (*Umlaut*) in the English language. 15

Or,

Discuss the influence of the Norman Conquest on the English language.

2. Give a brief historical account of the *Demonstrative Pronouns* in English. 15

Or,

Write a note on the Norse element in English.

3. Explain and illustrate the terms *Fossils* and *Folk-Etymology*. 15

Or,

Write a short essay on *Slang* and *Legitimate Speech*.

4. Write philological notes on *any five* of the following:— 15
roman, bridegroom, songstress, brethren, could, villain, nice, foremost, assassin.

GROUP C.

(For 'B' Group students only.)

Answer ANY TWO questions.

1. 'Literature is the interpretation of Life.' Discuss. 15
2. Distinguish between the Classical and the Romantic school of criticism. 15
3. Compare the Novel and the Short Story as types of literature. 15
4. How are Science and Literature related to each other? 15

SECOND HALF

Examiner—MR. V. K. AYYAPPAN PILLAI, M.A. (Mad.), B.A. (Oxon.)

The questions are of equal value.

Answer ANY THREE questions.

1. Compare the lyric poetry of the Elizabethan age with that of the early 19th century, in respect of their imaginative content and the use of poetic forms.

2. What indications of the decadence of Elizabethan drama do you observe in the work of Beaumont and Fletcher and Webster?

3. Briefly trace the growth of the English 'Essay', and write a note on the work of your favourite *living* English essayist.

4. Consider the poetic achievement of Wordsworth and Coleridge in the light of the statements of Wordsworth in the 'Preface', and of Coleridge in the 'Biographia Literaria'.

5. Give an account of the elegy and the elegiac spirit in the English poetry of the 19th century.

6. Write a short appreciation of the work of *one* of the following writers:—

Marlowe, Gray, Carlyle, Meredith, Robert Browning, Conrad.

SECOND PAPER

The figures in the margin indicate full marks.

FIRST HALF

Examiner—PROF. JAYGOPAL BANERJI, M.A.

1. Write a short essay, with illustrative references, on one of the following :— 15

- (a) A comparison of Shakespeare's Octavia with Dryden's.
- (b) The part played by Dolabella in *Antony and Cleopatra* and in *All for Love*.
- (c) The character of Enobarbus.

2. *Either,* 15

How far does Every Man in his Humour 'shew and Image of the times'?

Or,

Write a note on the Gull as a literary type and Jonson's treatment of it in *Every Man in his Humour*. 15

3. Annotate the following passages, with reference to the context, and indicate the mood of the speaker in each case :— 20

- (a) O! then we bring forth weeds
When our quick winds lie still; and our ills told us
Is as our caring.

(Discuss the reading *minds* for *winds* in line 2.)

Or,

I was of late as petty to his ends
As is the morn-dew on the myrtle-leaf
To his grand sea.

(Discuss the readings 'the grand sea', 'its grand sea' for 'his grand sea' in the last line.)

- (b) This 'a good block;
It were a delicate stratagem to shoe
A troop of horse with felt. I'll put't in proof.

Or,

This is some fellow,
Who, having been prais'd for bluntness, doth affect
A saucy roughness, and constrains the garb
Quite from his nature.

- (c) Poor I was made
Of that coarse matter, which, when she was finished,
The gods threw by for rubbish.

(Did the speaker's namesake in the other play show the same temper in a similar context? Could she?)

Or,

My torch is out; and the world stands before me,
Like a black desert at the approach of night:
I'll lay me down, and stray no further on.

(What passage in the other play is recalled to your memory? Compare the two passages in respect of setting and artistic effect.)

- (d) But man, proud man,
Drest in a little brief authority,
Plays such fantastic tricks before high heaven
As make the angels weep; who, with our spleen,
Would all themselves laugh mortal.

Or,

Thou hast nor youth nor age;
But, as it were, an after-dinner's sleep,
Dreaming on both.

(e) Nay, you lamp of virginity, that take it in snuff so, come and cherish this tame poetical fury in your servant; you'll be begged else shortly for a concealment.

Or,

Marry, sir, my proper fine pen-man would needs bestow grist on me, at the Windmill, to hear some martial discourse; where I so marshalled him that I made him drunk with admiration.

SECOND HALF

Examiner—MR. NIRMALKUMAR SIDDHANTA, M.A., B.LITT.

1. Either, 15

Do you consider the tragic catastrophe in *King Lear* inevitable? Can you justify a happy ending for the play?

Or,

Discuss, with special reference to *King Lear*, Shakespeare's handling of 'the Unity of Impression'. 15

2. Either, 15

It has been said of *Measure for Measure* that it is 'an epitome of Shakespeare's moral judgments'. What are these 'moral judgments'? How far is such a criticism justifiable?

Or,

Discuss, with illustrative references, the merits of the following remarks on Angelo:— 15

- (a) 'A self-righteous hypocrite, a mere pretender to morality which he never possesses.' (*Brandes.*)
(b) 'His "hyprocrisy" was nothing more serious than "self-deception".' (*Raleigh.*)

3. Explain one of the following passages, and add an appropriate head-line to the piece, indicating its central idea:— 20

- (a) O for a Muse of fire, that would ascend
The brightest heaven of invention,
A kingdom for a stage, princes to act
And monarchs to behold the swelling scene!
Then should the warlike Harry, like himself,
Assume the port of Mars; and at his heels,
Leash'd in like hounds, should famine, sword and fire
Crouch for employment. But pardon, gentles all,
The flat unraised spirits that have dared
On this unworthy scaffold to bring forth
So great an object; can this cockpit hold
The vasty fields of France? or may we cram

Within this wooden O the very casques
 That did affright the air at Agincourt?
 O, pardon! since a crooked figure may
 Attest in little place a million;
 And let us, ciphers to this great accompt,
 On your imaginary forces work.
 Piece out our imperfections with your thoughts;
 For 'tis your thoughts that now must deck our kings,
 Carry them here and there; jumping o'er times,
 Turning the accomplishment of many years
 Into an hour-glass.

- (b) Time hath, my lord, a wallet at his back
 Wherein he puts alms for oblivion,
 A great-sized monster of ingratitude;
 Those scraps are good deeds past, which are devour'd
 As fast as they are made, forgot as soon
 As done: perseverance, dear my lord,
 Keeps honour bright: to have done, is to hang
 Quite out of fashion, like a rusty mail
 In monumental mockery. Take the instant way;
 For honour travels in a strait so narrow,
 Where one but goes abreast: keep then the path;
 For emulation hath a thousand sons
 That one by one pursue: if you give way,
 Or hedge aside from the direct forthright,
 Like to an enter'd tide they all rush by
 And leave you hindmost:
 Or, like a gallant horse fall'n in first rank,
 Lie there for pavement to the abject rear,
 O'er-run and trampled on: then what they do in present,
 Though less than yours in past, must o'er-top yours;
 For time is like a fashionable host
 That slightly shakes his parting guest by the hand,
 And with his arms outstretch'd, as he would fly,
 Grasps in the comer: welcome ever smiles,
 And farewell goes out sighing.

THIRD PAPER

The figures in the margin indicate full marks.

FIRST HALF

Examiner -DR. MOHINIMOHAN BHATTACHARYYA, M.A., PH.D.

Answer only ONE question from EACH group.

GROUP A.

1. Discuss the *Prologue to the Canterbury Tales* as a picture of social life in the Middle Ages. 18
 2. Explain and fully annotate two of the following passages:— 18
- (a) Ther nas no man no-wher so vertuous.
 He was the beste beggere in his hous;
 For thogh a widwe hadde noght a sho,
 So plesaunt was his '*In principio*',
 Yet wolde he have a ferthing, er he wente.
 His purchas was wel bettre than his rente.

- (b) He sette nat his benefice to hyre,
 And leet his sheep encombred in the myre,
 And ran to London, un-to sēynt Poules,
 To seken him a chaunterie for soules,
 Or with a bretherhed to been witholde;
 But dwelte at hoom, and kepte wel his folde,
 So that the wolf ne made it nat miscarie;
 He was a shepherde and no mercenairie.
- (c) His resons he spak ful solempnely,
 Souninge always th'enerces of his winning.
 He wolde the sec were kept for any thing
 Betwixe Middelburgh and Orewelle.
 Wel coude he in eschaunge sheeldes selle.

GROUP B.

3. Write a note on mysticism in Henry Vaughan, and give illustrative references to his poems. 16
4. What do you mean by the 'Metaphysical School' of poets? Discuss its principal characteristics. 16

GROUP C.

5. Explain and illustrate the remark that Pope's satirical poetry is bitterly personal. 16
6. Explain with reference to the context *any two* of the following passages :— 16

- (a) I sought no homage from the race that write;
 I kept, like Asian monarchs, from their sight:
 Poems I heeded (now be-rhym'd so long)
 No more than thou, great George! a birth-day song.
 I ne'er with wits or witlings pass'd my days,
 To spread about the itch of verse and praise;
-

But sick of fops, and poetry, and prate,
 To Bufo left the whole Castalian state.

- (b) Envy must own, I live among the great,
 No pimp of pleasure, and no spy of state,
 With eyes that pry not, tongue that ne'er repeats,
 Fond to spread friendships, but to cover heats;
 To help who want, to forward who excel;
 This, all who know me, know; who love me, tell;
 And who unknown defame me, let them be
 Scriblers or peers, alike are mob to me.
- (c) But how severely with themselves proceed
 The men, who write such verse as we can read?
 Their own strict judges, not a word they spare,
 That wants or force, or light, or weight, or care,
 Howe'er unwillingly it quits its place,
 Nay tho' at Court, perhaps, it may find grace:
 Such they'll degrade; and sometimes, in its stead,
 In downright charity revive the dead;—

SECOND HALF

Examiner—DR. H. C. MOOKERJEE, M.A., PH.D.

Answer Question FIVE and only ONE question from EACH of the two Groups A and B.

GROUP A.

1. Write notes, with illustrative references, on *two* of the following :— 18

- (a) the 'rigid tranquility' of Robert Bridges;
- (b) the 'delicate and haunting music' of William Butler Yeats;
- (c) the 'subtle intensity' of Francis Thompson.

2. Give a critical interpretation of *any two* of the following poems :— 18

G. Russell's *Frolic*; Laurence Binyon's *Initiation*; Alice Meynell's *Renouncement*; Walter de la Mare's *A Song of Enchantment*; Rupert Brooke's *The Dead*.

GROUP B.

3. Write a note on the subjective intensity in the poems in *Men and Women*. 12

4. Write critical notes on *any two* of the following poems :— 12

Andrea del Sarto; *The Bishop orders his tomb at Saint Praxed's Church*; *Pictor Ignotus*; *Transcendentalism*.

5. Explain *one* of the following passages, and comment on its style and diction :— 20

- (a) They who create rob death of half its stings;
 Their life is given for the Muse's sake;
 Of thought they build their palaces, and make
 Enduring entities and beauteous things;
 They are the poets—they give airy wings
 To shapes marmorean; or they overtake
 The Ideal with the brush, or, soaring, wake
 Far in the rolling clouds their glorious strings.
 The Poet is the only potentate;
 His sceptre reaches o'er remotest zones;
 His thought remembered and his golden tones
 Shall, in the ears of nations uncreate,
 Roll on for ages and reverberate
 When kings are dust beside forgotten thrones.

- (b) Because I have loved life, I shall have no sorrow to die.
 I have sent up my gladness on wings, to be lost in the
 blue of the sky.
 I have run and leaped with the rain, I have taken the
 wind to my breast.
 My cheek like a drowsy child to the face of the earth
 I have pressed.
 Because I have loved life, I shall have no sorrow to die.
 I have kissed young Love on the lips, I have heard
 his song to the end.
 I have struck my hand like a seal in the loyal hand
 of a friend.

I have known the peace of heaven, the comfort of
work done well.
I have longed for death in the darkness and risen
alive out of hell.
I give a share of my soul to the world where my
course is run.
I know that another shall finish the task I must
leave undone.
I know that no flower, no flint was in vain on the
path I trod.
As one looks on a face through a window, through
life I have looked on God.
Because I have loved life, I shall have no sorrow to die.

FOURTH PAPER

The figures in the margin indicate full marks.

FIRST HALF

Examiner—MR. RAJANIKANTA GUHA, M.A.

1. Burke's *French Revolution* 'is not only the greatest exposition of the philosophic basis of conservatism ever written, but a declaration of the principles of evolution, continuity, and solidarity, which must hold their place in all sound political thinking'. 20

Discuss.

Or,

Bring out the ideas underlying *two* of the following:— 20

(a) Government is not made in virtue of natural rights, which may and do exist in total independence of it; and exist in much greater clearness, and in a much greater degree of abstract perfection: but their abstract perfection is their practical defect.

(b) Society is indeed a contract. Subordinate contracts, for objects of mere occasional interest, may be dissolved at pleasure; but the State ought not to be considered as nothing better than a partnership agreement in a trade of pepper and coffee, calico or tobacco.

(c) *Spartan nactus es; hanc exorna*, (You have got possession of Sparta; adorn it). This is, in my opinion, a rule of profound sense, and ought never to depart from the mind of an honest reformer.

2. In reviewing Carlyle's *Past and Present*, Chesterton says: 'It is true to say of Carlyle that his conception of the past was a vision, that is, a thing splendid and even inspired, but still personal and liable to error. But it must be added that Carlyle's view of the present was a vision too'.

Do you agree? 20

Or,

Write a short essay on Carlyle's Political Philosophy. 20

3. Elucidate *two* of the following passages, taking *one* from each group :— 10

A.

(a) A spirit of innovation is generally the result of a selfish temper and confined views.

(b) Law itself is only beneficence acting by a rule.

B.

(c) 'The unconscious is the alone complete.'

(d) 'Our highest religion is named the "Worship of Sorrow".'

SECOND HALF

Examiner -PROF. J. R. BANERJEA, M.A., B.L.

N.B.—Answer Question 5 and two of the remaining questions, ONE of which must be selected from Group A and ONE from Group B.

GROUP A.

1. 'The literary life of Coleridge was a disinterested struggle against the relative spirit.' Fully develop, after Pater, the thought embodied in this sentence. 15

Or,

What are, according to Pater, the characteristics of Elia? Discuss Pater's remark that Elia is essentially an essayist and of the true family of Montaigne.

2. Write a critical note on Pater's style as you find it in *Appreciations* in the light of the following observations :— 15

The end of a good style is beauty of expression and to achieve this end a consciously artistic prose should be advocated, where all superfluities should be eliminated, and where the words should be chosen with jealous and loving care, so as to express clearly and precisely the underlying thought. A good style implies sensitiveness to the colour and gradation of shade in words and an amazing delicacy and subtlety in the critical nuances by which the writer tries to actualize for the reader the object of his criticism.

GROUP B.

3. How does Milton show in the *Areopagitica* that the order of licensing does not conduce to the end for which it was framed and that it causes manifest hurt? 15

Or,

What does Milton say about the use of books generally?

4. Explain fully *any three* of the following passages, taking not more than two from each group :— 15

A.

(a) This order therefore may prove a nursing mother to sects, but I shall easily shew how it will be a stepdame to Truth.

(b) The light which we have gain'd was giv'n us, not to be ever staring on, but by it to discover onward things more remote from our knowledge.

(c) Give her but room, and do not bind her when she sleeps, for then she speaks not true, as the old Proteus did. . . . ; but then rather she turns herself into all shapes except her own, and perhaps tunes her voice according to the time, as *Micaiah* did before Ahab, until she be adjur'd into her own likeness.

B.

(a) Against this predominance of machinery in our existence, Wordsworth's poetry, like all great art and poetry, is a continual protest.

(b) The writings of Charles Lamb are an excellent illustration of the value of reserve in literature.

(c) If the spiritual attains the definite visibility of a crystal, what is material loses its earthiness and impurity.

5. Bring out briefly but clearly the ideas contained in *one* of the following extracts :— 20

(a) There are moments when the mind refuses to be satisfied with evolution, and demands a ruddier presentation of the sum of man's experience. Sometimes the mood is brought about by laughter at the humorous side of life, as when, abstracting ourselves from earth, we imagine people plodding on foot, or seated in ships and speedy trains, with the planet all the while whirling in the opposite direction, so that, for all their hurry, they travel back foremost through the universe of space. Sometimes it comes by the spirit of delight, and sometimes by the spirit of terror. At least, there will always be hours when we refuse to be put off by the feint of explanation, nicknamed science ; and demand instead some palpitating image of our estate, that shall represent the troubled and uncertain element in which we dwell, and satisfy reason by the means of art. Science writes of the world as if with the cold finger of a starfish ; it is all true ; but what is it when compared to the reality of which it discourses ? Where hearts beat high in April, and death strikes, and hills totter in the earthquake, and there is a glamour over all the objects of sight, and a thrill in all noises for the ear, and Romance herself has made her dwelling among men. So we come back to the old myth, and hear the goat-footed piper making the music which is itself the charm and terror of things ; and when a glen invites our visiting footsteps, fancy that Pan leads us thither with a gracious tremolo ; or when our hearts quail at the thunder of the cataract, tell ourselves that he has stamped his hoof in the nigh thicket.

(b) There are two ways in which a sudden flood of mechanical inventions embarrasses and endangers civilization in the very act of advancing it. Science, philosophy, education, become smothered with the volume of materials before they have learned to use them, bewildered by the very multitude of their opportunities. Art, manners, culture, taste, suffer by the harassing rapidity wherewith life is whirled on from old to new fashion, from old to new interest, until the nervous system of the race itself is agitated and weakened by the never-ending rattle. Suppose that a few more discoveries yet enabled us, as Jules Verne's heroes, to pass at will like gnomes through the centre of the earth, or the depths of the sea, and the regions of space, to make a holiday tour to the volcanoes of the moon, and the fiery whirlpools of the sun, to take soundings in a comet's tail, and to hold scientific meetings in the nebulae of Orion—we should seem to one another madmen ; for we should have no common point of interest or action, of rest or affection. Rest and fixity are essential to thought, to social life, to beauty ; and a growing series of mechanical inventions making life a string of dissolving views is a bar to rest and to

fixity of any sort. And if this restless change weakens the thought, the culture, and the habits of those who have leasure or wealth, it degrades and oppresses the life of those who labour and suffer, for their old habits of life are swept away before their new habits of life are duly prepared; and the increased resources of society are found in practice to be increased opportunities for the skilful to make themselves master of the weak. But amidst all the dangers of these material appliances flung random upon a society unprepared for them, let us beware how we join in the impatience which protests that we are better without them. Let Carlyle pronounce anathemas on steam-engines and Ruskin seek by the aid of St. George to abolish factories from England; all this is permitted to a man of genius. But men of practical purpose have a different aim.

GROUP A (a)

(Selected Period of Drama)

The questions are of equal value.

FIRST HALF

Examiner—MR. KUMUDBANDHU RAY, M.A.

Answer THREE questions only.

1. What were the innovations, in matter as well as style, that Marlowe sought to introduce into English drama, and how far was he successful in his attempt?

2. Lorenzo in *The Spanish Tragedy* has been spoken of as the first in a long line of villains in Elizabethan drama, embodying the Machiavellian principle of the excellence of *virtu*. Discuss.

3. Point out some of the Senecan elements in the tragedies of Kyd and Shakespeare.

Give illustrative references.

4. Is it merely the happy ending in *The Winter's Tale* that distinguishes it from *Othello*, while both turn upon the subject of matrimonial jealousy? Give reasons in support of your answer.

5. Write a critical note on Shakespeare's use of the Clown, with special reference to Touchstone, and the Fool in *King Lear*.

SECOND HALF

Examiner—MR. BIJAYGOPAL MUKHERJEE, M.A.

Answer THREE questions only.

1. Ben Jonson has been styled 'the mirror of manners'. Illustrate.

2. What precisely is the extent of Ben Jonson's classicism, and with what success does he apply it for the improvement of the contemporary English stage?

3. Is it correct to define tragi-comedy as 'averted tragedy'? Illustrate your answer by a brief examination of *Philaster*.

4. Characterize *The Duchess of Malfi* as a tragedy. Do you consider the Duchess 'heroic' enough to be the protagonist in a great tragedy?

5. Write a critical estimate of Ford as a dramatist, and show briefly that his plays bear evidence of 'the flagging (dramatic) genius of the time'.

GROUP A (b)

(Selected Period of Poetry)

FIRST HALF

Examiner— PROF. JAYGOPAL BANERJEE, M.A.

The figures in the margin indicate full marks.

N.B. Candidates have to answer questions of the total value of 50 in this half.

1. Up to a certain stage of its development, 'Romanticism appears as an expansion of the revolutionary individualism of Rousseau.' 20

Or,

'Wordsworth and Coleridge were too self-centred, Shelley too ethereal, Byron lacking in subtlety', but 'Keats interested in the incidents in the development of the soul.'

Examine the statement with reference to the *representative* works of the poets concerned.

2. Elucidate *one* of the following, giving illustrative references or quotations:— 16

(a) 'Wordsworth had always been something more than a nature mystic or expansive pantheist.'

(b) 'The theme of *Dejection: An Ode* is "as radical transcendentalism as some of Coleridge's earlier conceptions were radical necessitarianism".'

(c) 'Oddly enough, though a Romantic by personal temperament, by literary conviction Byron belonged to the other school.'

(d) 'Keats had fought his way from an indulgent to a *disciplined* sensuousness.'

3. Is it correct to say that 'Shelley's idea of the millennium is simple because it was merely a kind of Arcadian paradise'? 14

Or,

Can you accept the view that Keats' 'own knowledge of real men and women is surer than that of Wordsworth and Shelley'?

Or,

Is it in Wordsworth or in Shelley that you have an expression through sense of something beyond sense?

4. Write a critical note on either the sensuous imagery of the *Eve of St. Agnes*, or the nature poetry in *Prometheus Unbound*, or the philosophy of life embodied in an *Ode on Intimations of Immortality*. 14

5. Show by a thorough analysis of the poems mentioned below 'the parallelism of mood' reflected in them:— 16

(1) Wordsworth's *The Tables Turned*, (2) Shelley's *To Jane: The Incitation*, (3) Coleridge's *Frost and Midnight*, and (4) stanzas 3 to 6 of Keats' *Nightingale Ode*.

Or,

Compare for *harmony* of substance and form almost in its perfection the following pieces:—

(1) Wordsworth's 'Tintern Abbey', (2) Coleridge's 'Christabel', (3) Shelley's 'Adonais', and (4) Byron's 'Childe Harold'.

SECOND HALF

Examiner—DR. U. C. NAG, M.A. (Cal.), PH.D. (Lond.)

The questions are of equal value.

Attempt ANY THREE from the following questions.

1.

Either,

(a) 'The regular, monotonous, closely woven rhythm of the heroic couplet is the appropriate setting for the mood of quiet and of simple strength which Crabbe feels.' Discuss with illustrative references.

Or,

(b) Analyze the novel and conventional elements in the poetry of Crabbe, and indicate the anticipations of Wordsworth in Crabbe's poetry.

2.

Either,

'O Lady! we receive but what we give,
And in our life alone doth Nature live.'

How far does the above indicate the character of the poetry of Coleridge?

Or,

How do you differentiate Wordsworth's mysticism from that of Shelley? Bring out your points with special reference to *Prelude*, Book II, *Tintern Abbey*, *Lines Written in Early Spring*, *Immortality Ode*, and *Adonais*, *Prometheus Unbound*, *Hymn to Intellectual Beauty*.

Or,

Can you adduce evidence to show that *Prometheus Unbound* is an attempt to sublimate the popular melodrama of the early nineteenth century?

3. Write a critical note with illustrative references on *any two* of the following:—

- (a) Wordsworth's spiritual thrift.
- (b) Coleridge's beauty-making power.
- (c) Shelley's mythopœic faculty.

4. *Either,*

'Byron has an incipient classic temper'. Do you agree? Give illustrative references in your answer, specially from *Childe Harold* and *Don Juan*.

Or,

Can you account for the comparative obscurity into which the poetry of Byron has fallen in later times?

5. *Either,*

Write a critical note on the Ode, indicating its meaning, scope, and technique with reference to Gray, Collins, Wordsworth, Shelley, and Keats. (One illustrative reference to each will do.)

Or,

Write a note on the blank-verse of Wordsworth and Keats, with special reference to *Prelude* and *Hyperion*.

GROUP A (c)

(Special Prose Period)

The questions are of equal value.

FIRST HALF

Examiner—MR. PRIYARANJAN SEN, M.A.

Answer ANY THREE of the following questions.

1. What does Ruskin propose to achieve through his *Modern Painters*? What makes him extol Turner as an artist?

2. 'Thackeray is to the age of Victoria what Addison and Steele were to the age of Anne—its painter.' Elucidate this statement with reference to the *Vanity Fair*. How far is his painting fair and impartial?

3. Of the Victorian novelists, Dickens is noted for his broad sympathy for the waifs and strays of society. Illustrate this quality of his writing from *David Copperfield*. How far is the book autobiographical?

4. 'George Eliot is an incomparable painter of the lower circles of English provincial life, and of a whole order of souls who, simple as social values go, are nevertheless spiritually complex, torn by scruples, and by the anguish of moral conflicts.' Elucidate the above statement with special reference to the *Mill on the Floss*.

5. Write notes on *any three* of the following characters: Mrs. Poyser, Seth Bede, Rochester, Lord Steyne, Agnes Wakefield.

SECOND HALF

Examiner—MR. RAMAPRASAD MUKERJEE, M.A.

Answer ANY THREE out of the following five.

1. 'Arnold is, as a critic, the most modern of moderns. He was rather an interpreter of the spirit of the age than a prophet or a leader. If he lacked Carlyle's colossal force, he was free from that great writer's gloomy pessimism and love of vituperation. . . . Misunderstood and censured by the champions of orthodox liberality, he was really one of the most religious-minded of men. He taught his fellow countrymen to associate happiness, and not misery, with righteousness.'

Discuss the above statement.

2. 'Macaulay created the historical essay, a form of literature exactly suited to the time in which he lived, a brief, clear, and illuminating introduction to some great era or some dominating personality.' Elucidate.

3. Discuss Mill's attitude to life and his contribution to the thought of the Victorian Era.

4. In what sense was Carlyle the greatest moral force in England in his day? Explain his distrust of modern times and reverence for the past.

5. In Newman is to be found 'a combination of the psychologist, the moralist, and the preacher'. Examine this in the light of his essays you have read.

GROUP A (d)

(Foreign Classics in Translation)

The questions are of equal value.

FIRST HALF

Examiner—PROF. K. C. MOOKERJEE, M.A.

Candidates are recommended to attempt not more than THREE questions.

1. Give a critical estimate of the *Electra* of Sophocles, and compare it with the *Choephore* of Æschylus as regards both dramatic art and characterization.

2. 'Euripides is the most precious thing left us—the most like Shakespeare.' (*Charles James Fox*.)

Discuss.

3. 'A tragedy is impossible without action, but there may be one without character.' (*Aristotle*.)

Do you agree?

4. 'The Antigone is the perfect exemplar of tragedy.' (*Hegel*.)

Discuss this view.

5. 'Shakespeare speaks at times with "the large utterance of the early gods." It is the habitual language of Æschylus.'

Do you think the criticism is sound?

6. 'The ultimate and central message of Sophocles, his last word on life is "Look and wonder and think".'

Discuss.

SECOND HALF

Examiner—MR. NALINIMOHAN CHATTERJEE, M.A.

Attempt THREE questions only.

1. Compare the moral teaching and tendency of Æschylus and Euripides.

2. How did the Chorus come to acquire such an important position in Greek tragedy? What were its functions?

3. It has been said that the favourite subject of Greek tragedy is a great man struggling against Fate. Comment on this.

4. Write a critical appreciation of the *Agamemnon*. Is unity of time preserved in this play?

5. Compare Euripides and Seneca as Dramatists, with special reference to *Medea*.

6. Discuss the character of Prometheus as conceived by Æschylus. Illustrate your remarks.

GROUP A (c)

(History and Principles of Criticism)

The questions are of equal value.

FIRST HALF

Examiner—DR. SRIKUMAR BANERJEE, M.A., PH.D.

THREE questions to be answered, of which question 5 is to be one.

1. Is Plato really responsible for having given to poetry as an art a moralistic or hedonistic bent?

Or,

Is Plato's theory of inspiration consistent with the idea that the poetic art is far from being a spiritual activity?

2. 'In what sense and to what extent does Plato uphold an antithesis between poetry and philosophy?

Or,

How does Aristotle attempt to distinguish poetry from scientific and historical knowledge?

3. Does the Aristotelian conception of 'Katharsis' include the modern idea of 'the liberating power of art'?

Or,

What is precisely meant by the critical dictum that the Renaissance Platonists generally placed Beauty in the soul, whereas the Aristotelians generally placed it rather in the physical qualities?

4. Indicate the general position of Sidney as a critic, and point out how far his critical pronouncements fit in with modern conceptions.

Or,

Discuss the question as to how far Sidney's literary criticism is based on that of Plato and Aristotle, and in what respects he asserts his originality.

5. Examine, with reference to at least two acknowledged poems of high merit, one of the following:—

- (a) Croce's statement that 'it seems both permissible and advisable to define beauty as *successful expression*, or rather as *expression and nothing more*'.
- (b) 'Art and science are different and yet linked together.' (Croce.)
- (c) The sublime is the infinite in the finite, and the beautiful is the finite in the infinite (Schelling as interpreted by Croce).

SECOND HALF

Examiner—MR. AMIYAKUMAR SEN, M.A.

Answer THREE of the following questions.

1. 'I appeal to the greatest poets of the present day whether it is not an error to assert that the finest passages of poetry are produced by labour and study. The toil and delay recommended by critics can be justly interpreted to mean no more than a careful observation of the inspired moments, and an artificial connection of the spaces between their suggestions by the intertexture of conventional expressions.' (Shelley). Discuss the above statement in the light of what other critics say about the question.

Or,

In his critical theories Shelley 'was . . . attached to the ardent and soaring Plato—not the Plato of the Republic but him of the Ion and the Symposium.' Do you agree?

2. 'As a method, realism is a failure.' (Oscar Wilde). Discuss.

3. Examine Wordsworth's views on Fancy and Imagination.

4. 'If, then, verse may be made natural in itself, how becomes it improper to a play?' (Dryden). Describe briefly how this question is discussed in the Essay of Dramatic Poesy. What is your own opinion? Give reasons for your answer.

5. Discuss after Coleridge in his *Biographia Literaria* the place of metre in poetry and how far it determines the language of poetry.

GROUP B (a)

(Old English Text and Grammar)

The figures in the margin indicate full marks.

FIRST HALF

Examiner—PROF. SUNITI KUMAR CHATTERJEE, M.A., D.LITT.

PRESCRIBED PROSE TEXTS, GRAMMAR, AND PROSE UNSEEN.

1, Render into modern English *three* of the following passages, with notes and observations as indicated under each passage selected :— 30

(a) *ƿnd pā budon hīe hiera mægum ƿæt hīe gesunde frōm ƿodon ; ƿnd hīe cūrdon ƿæt tæc ilce hiera gefērum geboden wære ƿe ier mid pām cyninge wērun. Pā cūrdon hīe ƿæt hīe hīe ƿæs ne onmunden 'ƿon mā ƿe ēowre gefēran ƿe mid pām cyninge ofslargene wērun.'*

Give the context. Write notes on the words in *italics*. Comment on the syntax of the last sentence.

(b) *Be ðēm suðe wel Pāulus ūs manode, ðā hē cūeð : 'Gif hwā sie ābisgod mid hwelcum seyldum, gē ðonne ðe gūsdlice sindon gelērað ðā sūelcan mid mēnnðwārnesse gāste ; geseāwiað ƿow selfe. ð, lēas ēow becume costuzg.'*

Write a note on the style of the Old English version of the *Cura Pastoralis*. Comment on the words *italicized*.

(c) *Pā besæt sīo fierð hīo ƿær ūtan, pāhwīle ƿe hīo ƿiur lengest mēte hafdon ; ac hī hafdon pā heora stemn gesetenne ƿnd hiora mēte genotudne ; ƿnd wæs se cyng pā ƿider weardes on fære, mid ƿiure scire ƿe mid him fierdedon. Pā hē pā wæs ƿiderweardes, ƿnd sīo ōƿeru fired wæs hāmweardes.*

Annotate the words in *italics*. Write a brief note on the *Old English Chronicle*.

(d) *Se apostol pā gebugde to Gode ealne ƿone eard Asiam, ē is geteald tō healfum dēle middaneardes ; and āwrit ðā fēorðan Crīstes bēc, sīo hrēpað sw, ðost ymbe Crīstes godcundnyse. Ðā ōðre ðr; godspelleras, Mathēus, Marcus, Lucas, āwriton ieror be Crīstes mēnniscnyse.*

Write notes on the words *italicized*. Indicate the place of Ælfric in the history of Old English prose.

(e) *Ac utan dōn swā us ƿearf is, warnian ūs be swilcan ; and sōð is ƿæt ic sæge, wyrsan dēda wē witan mid Englum sume gewordene ƿone wē mid Bryttan āhwār gehȳrdan ; and ƿy ūs is ƿearf micel ƿæt wē ūs beƿencan, and wið God sylfne ƿingian georno.*

Give the context. Who is the author of the piece from which the above extract is taken ? Write something about his style. Annotate the words in *italics*.

2. Answer *two* of the following :—

5 + 5

(a) Write philological notes on *five* of the following words : *ealneg*, *hræn*, *untwogendlice*, *esne*, *fers*, *weofod*, *cystig gyden*, *Fastron sunnan-æfen*.

(b) Write a brief note on the verb system of Old English.

(c) Decline *sunu*, *fōt*, and *feoder*.

(d) Conjugate *witan* ; or, give the principal parts of *weorðan*, *bregdan*, *sellan*.

3. Render into Modern English :—

10

Alexander, Priamises sunu þæs cyninges, of Troiana þære byrig, genom þæs cyninges wif Monelaus, of Lacedæmonia, Creca byrig, Elena. Ymb hie weorð þæt mare gewinn and þa miclan gefeoht Creca and Troiana, swa þætte Creca hiefdon M scipa þara miclana dulmuna, and him betweonum gesworan þæt hie nafre noldon on cyþþe cuman ær he hiora teonan gewræcen. And hi ða X gear ymbe þa burg sittende waron and feohtende. Hwa is þætte áriman mæge hwæt þær moneynnes forwearþ on ægðere hand, þæt Omarus se scop sweetlicost sægde ! For þon nis mo þæs þwearf to seegenne, for þon hit longsum is, and eac monegum cuð.

(Alexander = another name of Paris ; Monelaus = Menelaus ; Omarus = Homer.)

SECOND HALF

Examiner Mr. JITENDRANATH CHAKRABARTY, M.A.

1. Render into Modern English prose the following passage :—

10

Bēowulf maðelode, bēotwordum spræc
nīehstan sīðe : “ Ic genēððe fela
gūða on geogoðe ; gýt ic wylle,
frūd folces weard, fūhðe scean,
mūrðu fromman, gif mec se mǣnsceaða
of eorðsele ut gesēceð.”
Gegrūtte ðā gumena gehwylene,
hwate helmberend hindeman (= last) siðe,
swāse gesīðas : “ Nolde ic sweord beran,
wāpen to wyrme, gif ic wiste hū
wið ðam āglūccan elles mchate
gylpe wiðgrīpan, swā ic giū wið

Grendle dyde ;

ac ic ðūr heaðuf res hātes wēne,
oreðes (= breath) ond attres : forðon ic mē
on hafu
bord ond byrnan.”

2. Render into Modern English prose *any three* of the following passages, adding notes on the words in *italics* :—

24

- (a) *Hæfde ðā forsīðod* sunu Ecgþeowes
under gynne grund, *Gēata Cymþa*,
nemne him heaðobyrne holpe gefrēmede,
hērenett heardo, and hālig God
gewēold wigsigor, witig Drihten ;
rodera lūðend hit on ryht *gescēd*
ȝðolice, *syþðan* hē eft *āstōd*.
- (b) *pīncēð* him on mōde *þæt* hē his monndryhten
clyppe and cysse, and on enō *lece*
honda and hēafod, swā hē hwīlum *īer*
in gēardagum *giefstōles brēac* ;
ðonne onwæcnēð eft winelēas guma,
gosiht him bi foran fealwe wāgas,
bapian brimfluglas, brēdan fēpra,
hrēosan hrim and snāw hægla gemenged.
- (c) *Pā* sēo snotere mægð snude gebrōhte
þæs horewīðan hēafod swā blādīg
on ðēm *wēlste* þā hyre foregenga
blūchlēor *ides*, hyra bēga neas t.
þēawum geðungen *pyder* on lādde,
and hit ðā swa heolfrig hyre on hond āgeaf,
higeðoncolre hām to berenne,
lūðith gingran sīne.
- (d) *Licgað* mē ymbūtan
heardes īrenes hāte goslægene
grindlas grēat, mid þy me God hafað
gehwæftod be þām healse. Swā ic *wāt* hē minne
hige cūðe
and *þæt* wisto ēac weroda Drihten,
þæt sceolde *unc* *Adame* yfele gowurðan
ymb *þæt* heofonrice, *þær* ic *āhte* minra handa
geweald.

3. Answer *two* of the following questions :—

16

(a) *Either*,

"The presentation of the story-material in *Beowulf* has been influenced, to a considerable extent, by ideas derived from Christianity." Discuss.

Or,

What idea of the primitive Germanic society do we get from *Beowulf* ?

(b) On what grounds has the *Dream of the Rood* been assigned at different times to Cædmon and to Cynewulf ?

(c) "*The Battle of Maldon* lacks the high technical finish of the older works." Discuss.

(d) Scan the first five verses of passage (a) in Question 2.

GROUP B (b)

(Middle English Texts)

(MIDDLE ENGLISH TEXTS.)

The figures in the margin indicate full marks.

FIRST HALF

Examiner—MR. NALINIMOHAN CHATTERJEE, M.A.

1. Render into Modern English *any four* of the following passages, adding grammatical and etymological notes where necessary :— 28

(a) And muche need is ou beoðe þæt ʒe nimen to ham gode ʒeme ;
 vor ʒe muwen muchel þuruh ham beon i-goded, and i-wursed on oðer halwe.
 ʒif heo sungeð þuruh ower ʒemeleaste, ʒe schulen beon bicleoƿed ƿeroƿ
 biuoren þe heie demare ; and forði, ase ou is muche need, & ham is ʒeto
 more, ʒorneliche techeð ham to holden hore riulen, boðe uor ou & for ham
 suluen ; liðeliche þauh, & luueliche ; uor swuch ouh wummones lore to
 beon—luuelich & liðe, and seldhwonne sturne.

(b) Þeos ule spac wel baldeliche ;
 For þah heo nadde swo hwatliche
 I-fare after hire here,
 Heo walde noþeles ʒefe answero
 Þe ni ʒegale mid swucche worde.
 For moni man mid speres orde,
 Haveþ litle strenge, and mid his schelde,
 Ah noþeles in one fælde
 Þurh belde worde and mid i-lece,
 Deþ his i-vo for arehþe swete.

(c) Þe last ende of mans lyfe es hard,
 Þat es, when he drawes to ded-ward.
 For when he es seke, and bedreden lys,
 And swa feble þat he may noght rys,
 Þan er men in dout and noght certayn
 Wethir he sal ever couer agayn.
 Bot yhit can som men, þat er sleghe,
 Witte if he sal of þat yuel deghe
 By certayn takens, als yhe sal here,
 Þat byfalles when þe ded es nere,

- (d) *Pus* passed is *þe* first *pas* ' of *þis* *pris* tale,
 & *þe* *þat* louen & lyken ' to listen a-ni more,
 alle wiðth on hol hert ' to *þe* hei; king of heuene
 preieth a pater noster ' priuely *þis* time
 for *þe* hend erl of herford ' sir humfray de bowne,
þe king edwardes newe ' at glouseter *þat* ligges,
 for he of frensche *þis* fayre tale ' ferst dede translate,
 In ese of englysch men ' in englysch speche ;
 & god graunt hem his blis ' *þat* godly so prayen !
- (e) I Font *þere* Freres ' all *þe* Foure Ordres,
 Prechinge ' *þe* peple ' for profyt of heore wombes,
 Gilosynge *þe* Gospel ' as hem good likeþ,
 For Couetyse of Copes ' Construeþ hit ille ;
 For monye of *þis* Maistres ' mowen cloþen hem at lyking,
 For Moneye & heore Marchaundie ' meeten ofte togedere
 Seþþe charite haþ be chapmon ' and cheef to schriuen lords,
 Mony ferlyces han bi-falle ' in a fewe *þores*.
- (f) He bar a bordun I-bounde ' wiþ a brod lyste,
 In A wepe-bondes wyse ' I-wriþen aboute
 A Bagge and a Bolle ' he bar bi his syde ;
 An hundred of ampolles ' on his hat seeten,
 Signes of Synay ' and schelles of Galys ;
 Moni Cros on his cloke ' and keies of Rome,
 And *þe* vernicle bi-fore ' for men schulde him knowe,
 And seo be his signes ' whom he souht hedde.

2. Mention some of the characteristic features of Middle English syntax.

12

Or,

Give the substance of one of the following : (i) Confession of Envy in Piers the Plowman's Vision, (ii) the general rules of conduct enjoined upon nuns in the Ancren Riwele.

12

3. Render into Modern English *one* of the following passages :—

10

(a) Wes næure gaet mare wrecce-hed on land ' ne næure hethen men
 werse ne diden þan hi diden ' for over sithon ne for-baren (hi) nouthur
 circe ne cyrce-herd ' oc namen al *þe* god *ð* par-inne was ' 7 brendan sythen
þe cyrce 7 al te gaedere. Ne hi ne forbaren biscopes land ne abbotes
 ne preostes ' ac ræueden munekes 7 clerekes 7 seurie man other *þe* over
 myhte. Gif twa mæn oþer iii coman ridend to an tun ' al *þe* tunscoipe
 flugæn for heom ' wenden *ð* hi wæron ræueres ' *þe* biscopes and lered
 men heom cursede seure ' oc was heom' naht þar-of ' for hi uueron al
 or-cursæd 7 for-suoren 7 for-loren.

- (b) Four skilles I fynd writen in som stede,
 Why men suld specialy drede þe dede ;
 An es for þe dede-stoure swa felle
 Pat es mare payne þan man can telle,
 Pe whilk ilk man sal fele with-in,
 When þe body and þe saule salle twyn.
 Another es for þe sight þat he sal se
 Of deucls, þat about hym þan sal be.
 Pe thred es for the account þat he sal yheld
 Of alle his lyf, of yhouthe and elde.
 Pe ferth es, for he es uncertayne
 Whether he sal wend til joy or payne.

SECOND HALF

Examiner- MR. HIRANKUMAR BANERJEE, M.A., B.LITT.

1. Explain *any four* of the following extracts, adding etymological and other notes where necessary :—

24

- (a) With that they gonnen laughe, and tho she scyde,
 'This romaunce is of Thebes that we rede ;
 And we han herd how that king Laius deyde
 Thurgh Edippus his sone, and al that dede ;
 And here we stenten et these lettres rede,
 How the bisshop, as the book can tello,
 Amphiorax, fil thurgh the ground to helle.'
- (b) Her gretteste ooth was but by sēynt Loy ;
 And she was cleped madame Eglentyne.
 Ful wel she song the service divyne,
 Entuned in hir nose ful semely ;
 And Frensh she spak ful faire and fetisly,
 After the scole of Stratford atto Bowe,
 For Frensh of Paris was to hir unknowe.
- (c) His nose-thirles blake were and wyde.
 A swerd and bokeler bar he by his syde ;
 His mouth as greet was as a greet forneys.
 He was a jangler and a goliardeys,
 And that was most of sinne and harlotryes.
 Wel coude he stelen corn, and tollen thryes ;
 And yet he hadde a thombe of gold, pardee.

- (d) For soothly, al the mount of Citheroun,
 Ther Venus hath hir principal dwelling,
 Was shewed on the wal in portreyng,
 With al the gardin, and the lustinesse.
 Nat was foryete the porter Ydelnesse,
 Ne Narcisus the faire of yore agon,
 Ne yet the folye of king Salamon.
- (e) Yet sawgh I brent the shippes hoppesteres ;
 The hunte strangled with the wilde beres :
 The sowe freten the child right in the oradel ;
 The cook y-scalded, for al his longo ladel.
 Noght was foryeten by the infortune of Marte ;
 The carter over-riden with his carte,
 Under the wheel ful lowe he lay adoun.
- (f) So hidous was the noyse, a ! benedicite !
 Certes, he Jakko Straw, and his meynee,
 Ne maden nevere shoutes half so shrille,
 Whan that they wolden any Fleming kille,
 As thilke day was maad upon the fox.
 Of bras they broghten bemes, and of box,
 Of horn, of boon, in whiche they blewe and pouped.

2. Compare Chaucer's development of his theme in *Troilus and Criseyde* with that of Boccaccio in the *Filostrato*, and discuss the view that it is impossible to judge Chaucer's Pandarus because we see two figures in the portrait. 16

Or,

Comment on the following :—

16

'The religious troubles which agitated England during Chaucer's life time have their echo in the *Canterbury Tales*, and these troubles make his sketches of clerics those of a definite date and place.'

Or,

Examine the statement that Chaucer alone among the English poets of his age discovered the interest of the realistic method of description. 16

3. Render *one* of the following extracts into Modern English :— 10

- (a) Whan seyde was al this miracle, every man
 As sobre was, that wonder was to see,
 Til that our hoste jopen tho bigan,
 And than at erst he loked up-on me,
 And seyde thus, 'what man artow ?' quod he ;
 'Thou lokest as thou woldest finde an hare,
 For ever up-on the ground I see thee stare.

Approche neer, and loke up merily.
 Now war yow, sirs, and lat this man have place ;
 He in the waast is shape as wel as I ;
 This were a popet in an arm t'enbrace
 For any womman, smal and fair of face,
 He semeth elvish by his countenance,
 For unto no wight doth he daliaunce.'

(b) And Lowis, yif so be that I shewe thee in my lighte English as trewe conclusiouns touching this matere, and naught only as trewe but as many and as subtil conclusiouns as ben shewed in Latin in any commune tretis of the Astrolabie, con me the more thank ; and preye god save the king, that is lord of this langage, and alle that him feyth bereth and obeyeth, everech in his degrec, the more and the lasse. But considere wel, that I ne usurpe nat to have founde this werk of my labour or of myn engyn. I nam but a lewd compilatour of the labour of olde Astrologiens, and have hit translated in myn English only for thy doctrine.

GROUP B (c)

(History of the English Language)

The questions are of equal value.

FIRST HALF

Examiner—MR. JITENDRANATH CHAKRABARTI, M.A.

Attempt THREE questions.

1. Trace the development of the Germanic long vowels *ā*, *ō*, *ī*, and *ū* of accented syllables in Old English. Illustrate your answer by suitable examples.

2. Annotate phonologically *eight* of the following words :—
vixen, hare, rear, dæg, hound, ten, daughter, red, fæder, curon, foot, forlorn.

3. Trace the history of *four* of the following suffixes used in Old English to form words :—

—*dom*, —*end*, —*had*, —*ung*, —*cund*, —*wende*, —*ing*.

4. How were the comparative and superlative degrees of adjectives formed in Old English ? Give the comparative and superlative forms of the following adjectives in Old English : *gōd, lȳtel, micel, yfel.*

5. Write a full note upon the preterite-present verbs in Old English. Explain the forms *wāt*, *ean*, *sceal*, and *mōt*.

Or,

Trace the history of the Third Personal Pronouns. How can you account for the modern forms *they*, *them*, *their*, and *its* ?

SECOND HALF

Examiner—MR. NALINIMOHAN CHATTERJEE, M.A.

Answer THREE questions.

1. Give the history of the Absolute Construction in English nouns and verbs.
 2. Trace the history of the gradual disuse of the Subjunctive Mood in dependent sentences.
 3. Comment on the following : whether, some, enough, each, won't, stepmother, as yet, the pronominal 'em.
 4. Illustrate the influence of 'fashion' in changing the use and meaning of words.
 5. Discuss the treatment of O. E. vowels in Middle English.
 6. Write a short essay on Modern English Spelling.
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GROUP B (d)

(Early German and French Classics)

Examiner—PROF. A. K. CHANDA, M.A.

The questions are of equal value.

Answer ANY FIVE questions.

1. 'WIDSITH is an epitome of the heroic poetry of *Germania*, and a clear proof of the common interest taken in all the heroes.' Discuss.
2. Briefly narrate the Germanic analogues of BEOWULF.
3. What are the peculiar characteristics which differentiate early French and early Germanic heroic poetry ? Illustrate your answer with special reference to CHANSON DE ROLAND and NIBELUNGENLIED.
4. What do you understand by the term *Saga* ? Give a short account of the two principal groups into which the *Sagas* are usually divided.
5. What are the chief sources of our knowledge of Odinic mythology ?

6. Write a brief critical appreciation of AUCASSIN AND NICOLETTE. What is the probable date of its composition ?

7. Briefly discuss the contribution of *Chrestien de Troyes* to the Grail legend.

8. 'Travellers are often arrested by the sight of some Druidic monolith standing among the rich, smiling fields of France, a grim sentinel of a past civilization. With something of the same aloofness the *Chansons de geste* appear among the ornate, brightly coloured romances of chivalry as rude relics of a bygone age.' Critically examine the above statement of Lord Conle in his *The Light Reading of Our Ancestors*.

9. Write brief notes on two of the following :—

(i) Roncevaux, (ii) Brynhild, (iii) Hilderbrandslied, (iv) Sigurd, (v) Siegfried.

GROUP B (c)

(GOTHIC)

The figures in the margin indicate full marks.

FIRST HALF

Examiner—MR. SUHASCHANDRA RAY, M.A.

Attempt THREE of the following questions.

1. Render into Modern English :—

50

(a) Gaháusjands þan Iesus sildaleikida, jah qap du þáim afarláistjandam : amēn, qipa izwis, ni in Israēla swaláuda galaubein bigat. Appan qipa izwis patei managái fram *urrunsa* jah *saggqa* qimand, jah anakumbjand miþ Abrahamá jah Isaka jah Iaköba in þiudangardjai himinē : ip þái sunjus þiudangardjös uswáirpanda in riqis þata *hindumistō* ; jáinar wáirþip grüts jah krusts tunþiwē.

Write etymological notes on the *italicized* words.

(b) Jah afsláupnödēdun allái sildaleikjandans, swaei sōkidēdun miþ sis missō qipandans : hwa sijái þata ? hwō sō *lauseinō* sō niuþō, ei miþ *waldunja* jah ahmam þáim unhráinjam anabiudip, jah ufháusjand imma ? *Usiddja* þan mēriþa is suns and allans bisitands Galeilaias.

Write grammatical or etymological notes on the *italicized* words.

2. Render into Modern English :—

(a) Jah qēmum þan áipei is jah broþrjus is, jah ūta standandōna insandidēdun du imma, *háitandōna* ina. Jah *setun* bi ina managei ; qēþun þan du imma : sái, áipei þeina jah *broþrjus* þeinái jah swistrjus þeinōs ūta sōkjand þuk. Jah andhþif im qipands : hwō ist sō áipei meina áipþáu

pái brōþrjus meinái? Jah bisalhwards bisunjanē þans bi sik sitandans qap : sái, áipei meina jah pái brōþrjus meinái.

Write grammatical or etymological notes on the *italicized* words.

(b) Jah qēmun in Bepaniin, jah bērun du imma blindan jah bēdun ina ei imma *attatōki*. Jah falrgreipands handu þis blindins, ustáuh ina útana weihsis jah speiwands in áugōna is, atlogjands ana handuns seinōs *frah* ina, ga-u-hwa-sēhwi? Jah ussalhwards qap : gasáihwa mans, þatoi swē bagmans gasáihwa gaggandans. Paþrōh aftra galagida handuns ana þō áugōna is, jah gatawida ina ussalhwan; jah aftra gasatips warþ, jah gasahw balrhtaba allans.

Derive the *italicized* words. Expound *ga-u-hwa-sēhwi*.

3. Render into Modern English :—

(a) Qapub-þan jah þamma háitandin sik : þan waúrkjáis *undaurnimat* alþþáu nahtamat, ni háitáis frijōnds þeinans nih brōþruns þeinans nih niþjans þeinans nih *garaznans gabeigans*, ibái áuftō jah eis aftra háitáina þuk, jah walrþiþ þus usguldun; ak þan waúrkjáis daúht, háit unlēdans, gamáidans, haltans, blindans.

Write etymological notes on the *italicized* words.

(b) Ip Iēsus andhōf im qipands : qam hweila ei swēráidáu sunus mans. Amēn amēn qipa izwis : nibái kaúrnō hwáiteis gadriusandō in áirþa gaswiltiþ, silbō áinata aflifniþ : ip jabái gaswiltip, manag akran balriþ. Saei frijōþ sáiwala scina, fraqisteip izái, jah saei fláiþ sáiwala seina in þamma fáirhwáu, in *libáinái áiweinōn* balrgip izái.

Derive the *italicized* words. Test the correctness of the form *fláiþ*.

4. Render into Modern English :—

(a) Ip skalks frúujins ni skal sakan, ak qairrus wisan wipra allans, láiseigs, uspulands, in qairrein talzjands þans andstandandans, niu-hwan gibái im guþ idreiga du ufkunþja sunjōs, jah usskawjáindáu us unhulþins wruggon, fram þammei gafahanái habanda afar is wiljin.

Decline the stems of *fráujins* and *sunjōs*. Conjugate the root of *gafahanái* in Preterite Singular and Plural.

(b) Give the Old English equivalents of *any five* of the following words, and account philologically for the differences in form :—

gaháusjands, *tunþiwē* in Q. 1 (a), *sōkidēdun* in Q. 1 (b), *bisathwands* in Q. 2 (a), *áugōna* in Q. 2 (b), *walrþiþ* in Q. 3 (a), *balriþ* in Q. 3 (b), *gafahanái* in Q. 4 (a).

SECOND HALF

Examiner—PROF. SUNITIKUMAR CHATTERJEE, M.A., D. LITT.

Attempt Question 5 and TWO others.

1. 'A knowledge of Gothic is indispensable to students of the oldest periods of the other Germanic languages.' Show why, with special reference to Old English.

2. Give a brief account of the Gothic development of the Germanic semi-vowels. 15

3. Show how the different forms of the *a*-declension (masculine) in Gothic are developed from Primitive Germanic. 15

4. Decline the Simple Demonstrative Pronoun (*Feminine*) in Singular and Plural. Decline *ansls* or *frijōnds*. Compare *leitils* or *swinps*. Give the different parts of *beidan* or *standan*. Conjugate *kunnan* (Present). 15

5. Render Into Modern English :— 20

Hausidedup patsi qipan ist : Frijōs nēhwundjan peinana, jah fijais fijand peinana. Apþan ik qipa izwis, frijop fijands izwarans, þiupþaiþ þans wrikandans izwis, waila taujaiþ þaim hatjandam izwis, jah bidjaiþ bi þans usþrintandans izwis ; ei wairþaiþ sunjus attins izwaris þis in himinam, unto sunnon seina urraneiþ ana ubilans jah gōdans, jah rigneiþ ana garaihtans jah ana inwindans (*unjust*). Jabai auk faijop þans frijondans izwis ainans, hwo mizdono habaiþ ? niu jah þai þiudo þata samo taujand ?

(Matt. V, 43—46.)

GROUPS A AND B

EIGHTH PAPER

(ESSAY.)

Examiners— { Mr. RABINDRANARAYAN GHOSH, M.A.
Mr. JYOTISCHANDRA BANERJEE, M.A.

Write an essay on one of the following subjects :—

- The Influence of Tradition on life and art.
- The Poetry of War.
- The Democratic Spirit : its influence on culture.
- Wit *versus* Humour.
- ' 'Tis not what man *Does* which exalts him, but what man *Would do*.'
- The methods, merits, and influence of the 'Popular Ballad' in English.

- Is tragedy by its nature a higher form of art than comedy ?
- 'Poetry is philosophy and philosophy is poetry.' (*Leigh Hunt*.)
- 'The Humanism of the 15th century was more literary and artistic than scientific.' (*Laurie Magnus*.)

SANSKRIT

FIRST PAPER

The figures in the margin indicate full marks.

FIRST HALF

Examiner—Mm. PANDIT SITARAM SASTRI.

The FIRST question and ANY TWO of the remaining questions are to be answered.

1 ऋतेन मित्रावरुणावतावतावतस्पृशा ॥ 20

क्रतुं बृहन्तमाशये ॥ १ ॥

युञ्जन्ति ब्रह्मरुषं चरन्तं परि तस्थुषः ॥

रोचन्ते रोचना दिवि ॥ २ ॥

नहि ते चव न सही न मयुः

वयश्चनामो पतयन्त आपुः ॥

नेमा आपो अग्निमिषं चरन्तीर्न ये

वातस्य प्रमिनन्त्याश्वम् ॥ ३ ॥

अबुधे राजा वरुणी वनस्वीध्वं सूपं ददते पूतदधः ॥

नीचीनाः स्युरपरि बुध एषामख्ये अन्ननिहिताः केतवः स्युः ॥ ४ ॥

त्वमग्ने प्रथमो मातरिभ्यो आविर्भव सुक्रतुया विवस्वते ॥

अरेजिता रोदसी हीद्वर्येऽसघ्नी भार्गवयजी मही वसी ॥ ५ ॥

अ॒पाद॒ह॒न्ती॒ अ॒पृ॒त॒न्दि॒न्द्र॒मा॒स्य॒ व॒ज्र॒म॒धि॒ सा॒नी॒ अ॒घा॒न ॥

व॒ष्ठी॒ व॒भिः॒ प्र॒ति॒मा॒नं॒ बु॒भू॒ष॒ण्ण॒व॒ता॒ व॒ती॒ अ॒श्र॒य॒ह॒स्तः ॥ ६ ॥

नी॒चा॒व॒या॒ अ॒भ॒व॒द्दृ॒व॒पु॒त्रे॒न्द्री॒ अ॒स्या॒ अ॒व॒ व॒ष॒र्ज॒भा॒र ॥

उ॒त्तरा॒ सू॒र॒धरः॒ पु॒त्र॒ आ॒सी॒द्दा॒नुः॒ श्र॒ये॒ स॒ह॒व॒त्सा॒ न॒ धे॒नुः ॥ ७ ॥

प्रथम-द्वितीयोऽर्च्यो मध्ये अन्यतरामवशिष्टानां मध्ये किमपि चतुष्टयस्य चां व्याख्येयस्य विच्छन्दो-
देवता-विनियोग-प्रदर्शनपुरस्सरं यथाभाष्यम् ।

2. जु॒जु॒ब॒धौ॒ ना॒स॒त्यो॒त॒व॒त्रि॑ प्रा॒सु॒च॒तं॒ द्रा॒पि॒मि॒व॒ अ॒व॒ना॒नात् ॥ 15

प्रा॒ति॒ग॒तं॒ अ॒ङ्गि॒त॒स्या॒यु॒र्द॒स्वा॒दि॒त्य॒ति॒म॒क॒ण॒तं॒ क॒नी॒नाम् ॥ १ ॥

यथाभाष्यमिति ह्यसोऽस्ते ख-पुरस्सरमिमांश्च व्याख्याय, “अभिज्ञवषडङ्गे ब्राह्मणाच्छंसिन
प्रातःसवने स्तोमवृद्धावावपार्थानि सुकृपकृत्वमित्यादौ नि षट् सूक्तानि” अस्या भाष्यपङ्क्तेरर्थः स्पष्ट-
प्रदर्शनीयः ।

3. वि॒क॒द्रु॒के॒ष्वपि॒व॒त्सु॒तस्य॑ । अ॒ङ्गिः॒ श्र॒य॒त॒ उ॒प॒पृ॒क्तं॒ पृ॒थि॒व्याः ॥ 15

वि॒रा॒सा॒त्तानि॑ स॒न्व॒ते । वे॒धा॒ नि॒द॒धे॒ प॒दम् ॥

सति सन्धवेऽर्थान्तर-प्रदर्शनगर्भमिमानं शान्वाख्याय,

ता॒दी॒वा । जु॒ह॒म॒सि॒ । ज॒ल॒गु॒लः॒ । कृ॒णो॒त । वि॒ज॒भ॒तः॒ । आ॒य॒जी ।

हो॒त्राम् । प॒र॒सु॒तः॒श्रीः॒ । ए॒तेषा॒म॒र्था॒ व्यु॒त्प॒त्तय॑श्च वि॒ले॒ख्याः ।

4 पा॒व॒का॒ नः॒ सर॑स्वती॒ वा॒जि॒भिर्वा॒जिनी॑ वती ॥ 15

यु॒ञ्ज॑ व॒ष्टु॒ धि॒या॒व॒सुः ॥ १ ॥

या वां कश्चा मधुमत्यंशिना सृष्टावती ॥

तया यच्च' मिमिक्षतम् ॥ २ ॥

अथ प्रथमे सरस्वती-वाग्निवीर्यशब्दयोः द्वितीये कश्चासृष्टावतीशब्दयोर्मध्ये कस्य विशेष्यपरता ? कस्य च विशेष्यपरता ? कुतश्चेति सहेतुकं निर्दिश्य मन्त्रार्थप्रदर्शनं कार्यम् ।

SECOND HALF

Examiner—PANDIT LAKSHMINARAYAN CHATTERJEE VEDASASTRI, M.A.

Attempt Question 1 and ANY TWO of the remaining.

1. (क) देवत्तं ब्रह्म गायत, 20

(ख) कक्षासी वां ब्रह्म जगत्त्वग्नि,

(ग) तं...प्र शंसामी मतिभिर्गोतमासः,

(घ) सनायते गीतम इन्द्र नव्यमतश्च द ब्रह्म...नीधाः,—

इत्यादिषु मन्त्रेषु देवत्तं, कक्षासः, गीतमासः, गीतमी नीधा इत्यादिपददृष्ट्या जगत्त्वग्नि, अतश्चदित्यादिपददृष्ट्या च शङ्का जायते मन्त्रा नापौरुषेयाः किन्तु पुरुषकृता एव । सायणोक्तदिशा सर्वाः शङ्का निरस्य स्वमतोपस्थाप्य वेदस्यापौरुषेयत्वं सम्यगालीच्यताम् ।

2. (क) 'धर्मब्रह्मणी वेदैकेद्ये'—व्याख्यायतानिदं सूत्रम् । 15

(ख) व्याख्यायतां सम्यक्तयाधी लिख्यमानि ग्रन्थः—

अद्वै बुध्निय मन्त्रं न इति मन्त्रस्य लक्षणम् ।

नाख्यसि वास्य नाख्ये तदव्याप्त्यादेरवारणम् ।

याज्ञिकानां समाख्यानं लक्षणं दीषवज्जितम् ।

तेऽनुष्ठानधारकादौ मन्त्रशब्दं प्रयुज्यते ॥

3. आम्नायस्य क्रियार्थत्वादानर्थक्यमतदर्शानामित्यादिपूर्वपक्षस्य सर्वां आशङ्का दूरीकृत्य वैश्वेन सिद्धान्तः प्रदर्श्यताम् । 15

4. “तद् यदिदमाहुरमुं यजामुं यजेयेकैकं देवमेतस्यैव सा विसृष्टिरेष उ ह्येव सर्वे देवाः ।” ऋग्वेदीतानां केषाञ्चिन्मुख्यदेवानां स्वस्वरूपवर्णनक्रमेण प्रदर्शयतां तावत् कथमुद्धृतयन्तुः सार्थकं भवति । प्रतिक्रमं श्रीमद्भिच्छन्दःगुह्यारः कार्यः । 15

SECOND PAPER

The figures in the margin indicate full marks.

FIRST HALF

Examiner—PANDIT SAKALNARAYAN SARMA.

1. (a) सुपि किं पदवी । 10
(b) पञ्चाजौ अत्र समासार्थ-समाहारनिष्ठं स्त्रीत्वम् ।
अनयोः काचिदेका फक्त्रिका व्याख्येया ।
2. सुजस् ऊङ्सु परत आदेशः स्युः सदैव ते त्वाहौ यूयवयौ तुह्यमहौ तवममावपि ज्याख्यायतामियं कारिका । 10
3. उभोऽङ्गसादचि उमुष् नित्यम् । न च बाह्यैव युक्ते । स्वाङ्गाञ्चोपस्वर्जनादभ्योगोपधात् । परोऽनुनासिकेऽनुनासिको वा । अत्र केषाञ्चन त्रयाणां सूत्राणामर्थाः सीदाहरणं लेख्याः । 10
4. पु'वदभावनिषेधकानि कानिचित् वीणि सूत्रानि सीदाहरणानि लेख्यानि । 6
5. जतिरस्त्रीविषयादपोपधादिति सूत्रं कौटुम्भी जातिगृह्यते ? 6
6. यत्नपटः यत्ना श्रुती, यत्नं वस्त्रम् । पुत्रश्च दुहित्वा । गार्ग्यश्च गार्ग्यायणश्च । अत्रैकशेषविशिष्टानि रूपाणि ससूत्राणि प्रदर्शनीयानि । 8

SECOND HALF

Examiner—DR. PRABHATCHANDRA CHAKRABORTI, M.A., PH. D.

Answer the FIRST question and ANY TWO of the rest.

1. (a) Explain any three of the following *sūtras* with suitable examples :— 20

आर्षधातुकं शेषः । गुणोऽपुक्ते । हेतुमति च । कर्तुः क्यङ् सलोपश्च । उपान्मन्-
करणे । अतो धेयः । दीपो णौ । यजजपदशां यङ् । विभाषा विप्रलापे ।

(b) Derive and show the difference of meanings in the following :—

कृतम् and कृणुम्; भित्तम् and भिन्नम्; निर्वाणः and निर्वातः; द्यूतः and द्यूतम्.

(c) चातु is generally defined as “क्रियावचनी चातुः” and sometimes as “भाववचनी चातुः”. Do they imply the same thing? If not, which one of the these two definitions is preferable? Give reasons for your answer.

2. Explain the formation of *any five* of the following, citing important rules in each case :— 15

तपस्यति । अचुकुमारत् । कष्टायते । अस्त्राचीत् । आशासति ।
रुददिषति । वेवेक्ति । दरिद्रितः । अजागरीत् । सेव्यति ।

3 Explain *any three* of the following :— 15

- (a) प्रकृतिवच्चेति चकारो भिन्नक्रमः । कारकं च चाल्कार्यमपि ।
- (b) अकर्तृभिप्राये ‘शेषादिति’ परस्मैपदं स्यादेव । वक्षान् पाययति पयः ।
- (c) भावे औत्सर्गिकमेकवचनं क्लीबत्वं च ।
- (d) अनुबन्धस्य केवलेऽचरितार्थत्वात् सन्नन्तात् ।
- (e) उपसर्गेण धात्वर्थो बलादन्यः प्रतीयते ।

4 (a) Explain and illustrate the परिभाषा “पञ्जन्यवृत्तचणप्रवृत्तिः”. 15

(b) What exactly is meant by अधिकार in grammar? How many kinds of अधिकार are known to you? Mention some अधिकारसूत्र and discuss their grammatical importance.

THIRD PAPER

The figures in the margin indicate full marks.

FIRST HALF

Examiners— { DR. BATAKRISHNA GHOSH, PH. D.
DR. S. K. CHATTERJEE, M. A., D. LITT.

Answer ANY THREE questions.

Full Marks—66.

1. Describe and classify Sanskrit consonants in the light of modern phonetics. 22

2. Give the history of Indo European velars (both simple and labialized) and 'palatals' in Sanskrit. 22

Or,

Write full notes on the pronunciation of ञ, च, ष, विसर्ग, and अनुस्वार in both ancient and modern India.

3. Explain गुण, वृद्धि, संप्रसारण with reference to Indo-European ablaut. 22

4. Discuss the Prākṛit and non-Aryan elements in Sanskrit. 22

5. Write a brief historical note on Sanskrit noun declension with special reference to Vedic forms. 22

6. Institute a comparison between the verbal systems of Vedic and classical Sanskrit. 22

SECOND HALF

Examiner—Mm. PANDIT GURUCHARAN TARKADARSANTIRTHA.

प्रथमद्वितीयदीर्घादन्तरमुच्चारयताम्षु द्वयोश्चत्तरं कार्यम् ।

1. ये एवकारस्य प्रकृतित्वमङ्गीकुर्वन्ति तेषां मतं कौटुश ? तस्यतस्खण्डने अगदीशसंख्या का युक्तिः ? 14

2. इतरार्थानवङ्गिन्नस्वार्थे यो बोधनाच्चनः । 14

तिङ्कार्यस्य निडाद्यन्तः स वाप्रत्यय उच्यते ॥

इति प्रत्ययलक्षणस्य कौटुशः ? इतरार्थानवङ्गिन्नपदस्य किं प्रयोजनं ? प्रथमलक्षणा-
दिष्वपि एकस्मिन्पुत्रो वर्तते चेत् स कौटुशः ?

3. का व्यञ्जना ? केषां सम्प्रता ? तत्पुण्डने च जगदीशसम्प्रता का युक्तिः ? 10
 4. वाक्यशेषात् स्वरादिपदस्य कुत्र शक्तियङ्गः ? 10
 5. किं नाम लक्षणं ? तस्य कीदृशः ? अत्र प्रथमे तिष्ठाने सुवित्तिकरणं को दीयः ? 10
-

FOURTH PAPER

The figures in the margin indicate full marks.

FIRST HALF

Examiner—PROF. KOKILESWAR SASTRI, M.A.

1. Point out the distinctive features of the Vedic and classical Sanskrit literatures. 50

And

Write a short essay on the state of the Indian society in the age of the R̥gveda.

SECOND HALF

Examiner—DR. S. N. DASGUPTA, M.A., PH. D.

- Write an essay on *any one* of the following subjects :— 50

(a) Describe Kālidāsa's approach to Nature, and justify your views about it with apt quotations.

Or,

Delineate the philosophy of love among some prominent Sanskrit poets, and illustrate your statements with apt quotations.

(b) Describe the conditions of social life in the R̥gveda and the Atharva-veda.

Or,

Elucidate clearly the mysticism of the Upaniṣads, defining clearly the nature of mysticism that one may find in the Upaniṣads.

(c) Trace the changes of customs enjoined in the Kali age.

Or,

Discuss the extent to which local customs and usages influenced the changes and variations in the ordinances of the Smṛti literature.

(d) Discuss the extent to which Śaṅkara's philosophy may be regarded as indebted to Buddhism,

Or,

Discuss whether the bheda-bheda doctrine or the monistic doctrine of Śaṅkara is more faithful to the Upaniṣads and the Brahma-sūtras.

(e) Give a clear exposition of the Yoga psychology in its relation to Yoga theory of knowledge and bondage and emancipation.

Or,

Compare the philosophy of Sāṅkhya with Buddhism, and in this connection discuss the extent to which Sāṅkhya may be regarded as idealistic and realistic.

(f) Give a clear exposition of the Nyāya theory of knowledge.

Or,

Give a clear exposition of Nyāya-Vaiśeṣika Ethics, Eschatology, and Emancipation.

(g) Discuss philosophically the concept of Being and Change in Sāṅkhya, Vedānta, and Nyāya.

Or,

Discuss comparatively the problem of knowledge in Nyāya, Sāṅkhya, and Vedānta.

(h) Give an account of the history of the development of the Prakrit literature.

Or,

Discuss critically the influence of the Prakrit dialect on the evolution of the Bengali language.

(i) Describe the main contents of Aśoka's edicts, mentioning their names, and draw from them a sketch of Aśoka as a virtuous ruler of his subjects.

Or,

Discuss the problem of the evolution of languages from the 3rd century B. C. to the 8th century A. D. from inscriptional evidence, illustrating your answer with specimen quotations from the inscriptions.

(GROUP A)

* FIFTH PAPER

The figures in the margin indicate full marks.

FIRST HALF

Examiner—PANDIT KUNJABIHARY TARKATIRTHA.

1. निम्नलिखितश्लोकेषु प्रथमद्वितीययो-तृतीयचतुर्थयोर्वा वक्तृबोहोऽयप्रकरणनिर्देशपूर्वकं
टीकाकाररीत्या व्याख्यानमाख्यायताम् । चतुर्थश्लोकस्यालङ्कारस्य लक्षणं समर्थनीयः :— 25

- (१) पदैश्चतुर्भिः सुकृते स्थिरीकृतं
कृतेऽमुना के न तपः प्रपेदिरे ।
भुवं यदेकाङ्घ्रि-कनिष्ठया स्पृशन्
दधाधर्म्मोऽपि कृशस्तपस्विताम् ॥
- (२) बह्वपि प्रियमर्थं तव हुवन्
न व्रजत्यश्वतवादितो जनः ।
सम्भवन्ति यददोषदूषिते
सार्व सार्वगुणसम्पदस्त्वयि ॥
- (३) अयं दरिद्रो भवितेति वैधर्मी
लिपिं ललाटेऽर्थिजनस्य जायते ।
मृषा न चक्रेऽल्पितकल्पपादपः
प्रणीय दारिद्र्यदरिद्रतां नृपः ॥
- (४) संशयाय दधतीः सङ्कपतां
दूरभिन्नफलयोः क्रियां प्रति ।
शब्दशसनविदः समासयो-
र्विशङ्कं न्यवससुः स्वरेण ते ॥

2. निम्नलिखितश्लोकेषु प्रथमद्वितीययो-तृतीयचतुर्थयोर्वा तात्पर्यं वक्तृबोहोऽयप्रकरणनिर्देश-
पूर्वकं स्वकीयसंस्कृतभाषया विस्तार्य लिख्यताम् :— 15

- (१) अवनीभृतां त्वमपङ्कज
गणमतिजङ्घः समुद्रतम् ।
नीचि निश्चतनिष्ठ तश्चपली
निरतः स्फुटं भवसि निम्नगासुत ॥

(२) नलभीमभुवीः प्रेम्नि विजिताया दधी दिवः
पाणिपाशः शिरःकम्प-स्रस्तभूषणवःशियम् ॥

(३) मुचुकुन्दतल्पशरणस्य
मगधपतिशान्तितीव्रः ।
सिद्धमवल सबलत्वमङ्गी
तव रोहिणीतनयसाहचर्यं तः ॥

(४) एकविकरणं हेतु मङ्गापातकपञ्चके ।
न दृष्टे मन्वते कोप-कामो यः पञ्च कारयन् ॥

३. नैषधकाठ्यात् कतिपयश्लोकानुद्धृत्य “नैषधे पदलालित्य”मिति प्रसिद्धवाक्यस्य
प्रामाण्यं स्थापनीयम् । 10

SECOND HALF

Examiner—PANDIT KOKILESWAR SASTRI, M.A.

1. Give some informations about the arrangement of the troops in the battle known to the ancient Hindus. 8
2. There are reasons to suspect that in ancient times the Hindus could construct the muskets and even large canons. Prove this. 9
3. Write something about the embassies and the spies employed by the Hindu kings. 8
4. Translate the following into Sanskrit :— 25

(a) In fact the accepted belief in the Indo-Aryan immigration from Central Asia depends largely on the interpretation of the geographical allusions in the Rigveda and Yajurveda. Direct testimony to the assumed fact is lacking, and no tradition of an early home beyond the frontier survives in India. The amount of geographical knowledge implied in the literature is considerable. Such knowledge in those ancient days could have been acquired only by actual travelling.

(b) The administration of justice is one of the chief duties of the sovereign. Hence the king's court takes precedence of all. He is assisted by learned Brahmins as assessors, one of whom acts as chief judge in his absence. It is not stationary, but follows him about. The second court, which is stationary, is that of the chief judge (प्राङ्निवाक) appointed by the king, and assisted by three or more Brahmin assessors, not exceeding seven. The third court is that of the inferior judges for local trial.

(Group A)

SIXTH PAPER

The figures in the margin indicate full marks.

First Half.

*Examiner :—*PANDIT KRISHNAPADA VIDYARATNA.

1.

Either,

Write in Sanskrit a short thesis on *one* of the following extracts :— 11

- (a) 'दैवी च सिद्धिरपि न लङ्घयितुं न शक्या' ।
 (b) 'मित्रं न कश्चिद् विषमस्थितस्य' ।
 (c) 'मधुरापि मूर्च्छयते विषविटपिसमापिता बह्वी' ।

Or,

Write in Sanskrit a short sketch of act VI of *सृच्छकटिक* or *वैष्णोसंहार*, or act V of *विक्रमोर्वशी*, or act IV of *महावीरचरित*

2. Explain fully one sloka from each group with reference to the context, giving important grammatical notes, explaining rhetoric expressions, and rendering Prakrit portion into Sanskrit :— 28

Group A.

ज्ञाता नु किं स खलु बन्धनविप्रयुक्ता
 मार्गागतः प्रवह्यन् मयाऽपनीतः ।
 चरित्रस्य वृत्तेः स्तुतिमागता वा
 येन।हमेवमभियुक्त इव प्रयामि ॥
 एष भो निर्मलज्योत्स्नी राहुणा गस्यते शशी
 जलं कूलावपातेन प्रसन्नं कलुषायते ॥
 अङ्गारकविरुद्धस्य प्रचीनस्य वृद्धस्यतेः ।
 शशीऽयमपरः पात्रे धूमकेतुरिवोत्थितः ॥
 किं नु नाम भवेत्कार्यमिदं येन त्वया कृतम् ।
 अपापा पापकल्पे न नगरश्रीर्निपातिता ॥

Group B.

दत्त्वाभयं सोऽतिरथो वध्यमानं किरीटिना ।
 मित्सुराजमुपेक्षेत् नैवं चेत् कथमन्यथा ॥
 कर्णाननेन्दुस्फरणात् क्षुभितः शीकसागरः ।
 बाडवेनेव शिखिना पीयते क्रीडन् मे ॥
 अथ मिथ्याप्रतिज्ञाऽसौ किरीटी क्रियते मया ।
 शस्त्रं गृह्णाण वा त्यक्त्वा मौलौ वा रचयाम्नालिम् ॥
 यद् वैद्युतामव ज्योतिरार्थे कुक्षेऽयं सम्भृतम् ।
 तत् प्रार्थयिष्ये कृष्णे यं नूनं सम्बर्हयिष्यति ॥

Group C.

मया नाम जितं यस्य त्वया जय उदीर्यते ।
 जयशब्दः सहस्राच्चादागतः पुरुषान्तरम् ॥
 नवजलधरः सप्तज्योऽयं न ह्रमनिशाचरः
 सुरधनुर्दिदं दूराकृष्टं न नाम शरासनम् ।
 अयमपि पटुर्धारासारी न बाणपरम्परा
 कनकनिकषक्लिग्धा विद्युत् प्रिया मम नोर्व्वेशी
 पङ्कजम वडिद्विषं गुरुष्वर पेन्धरसे ।
 मरे हंसजुषाणयो कीलङ्ग कामवसे ॥
 उर्व्वेशीसम्भवम्यायमैलसूनी-धनुषतः ।
 कुमारस्याग्रधी बाणः संहरतां द्विषदायुषाम् ॥
 परस्परविरोधिन्वीरेकसंशयदुर्लभम् ।
 सङ्गतं श्रीसरस्वत्योर्भयादुद्भूतं सताम् ॥

Group D.

सत्यसन्धाः स्थ यदि वा रामो वा यदि वः प्रियः ।
 तत् प्रसीदत मे माता पूर्णकामास्तु मध्यमा ॥
 सत्यसन्धा हि रघवः किं वत्स ! विचिकित्सि ।
 त्वयि दूतेऽपि कम्पस्याः प्राणानपि धनायति ॥

उत्पत्तिर्देवयजनाद्-ब्रह्मवादी वृषः पिता ।
 सुप्रसन्नीज्वला मूर्तिरस्यां खेङ्गं करोति मे ॥
 नान्यत्र राक्षसाद् वंशात् प्रसूतिरनयोः समा ।
 दुग्धार्थवाहते जन्म चन्द्रकौस्तुभयोः कुतः ॥

Who are the speakers of the ślokas in Groups B and D ? Name the metre in नवजलधरः in C. What does क्षतिरक्षः mean in B, and can you define it ?

3.

Father,

Name the book on which महाबौद्धचरित is based. What is the object of the author in differing from the original ? Can you point out some differences in the book

11

Or,

Among the poets (कालिदास, भवभूति, भट्टनारायण, and शूद्रक) to whom would you like to give first place (a) in good style, (b) natural description, (c) deep thoughtfulness, and (d) in making up the plot ? (Your answers must be supported by suitable quotations.)

Second Half.

Examiner :—MR. DEBENDRANATH RAY, M. A.

1. Give a picture of the Kāpālikas as given in the Mālati-Mādhava. What dramatic purpose is served by their introduction ?

6

2. (a) Render into Sanskrit and refer to the principal rules of Prakṛita grammar required to Sanskritize :—

6

महाभाष सरिसं क्व दं विष्णोश्च वषणां मधुरदाए लक्ष्मीपति । दंसचं उच्यते
 तत्कालमणोहरं परिषामदीहसंदावदाकणं । धन्याषी क्व ताषी अक्षकाषी जाषी तुमं ण
 पेक्खन्ति, पेक्खिष वा अत्तीणी हिषचक्ष पक्खन्ति ।

(b) Translate into English one of the following stanzas, using the context :—

5

(i) ये नाम केचिदिह नः प्रथयन्प्रवृत्तां

जानन्ति ते किमपि तान् प्रति नैव यमः ।

उत्पत्यतेऽसि मम कीऽपि समानधर्मा

काली ह्ययं निरवधिपुला च पृथ्वी ॥

(ii) एसा प्रवासं कथमप्यतीत्य याता पुनः संशयमन्यथैव ।

को नाम पाकाभिमुखस्य जन्तोर्हाराणि देवस्य पिधातुमीष्ट ॥

(c) Point out the figures of speech contained in the above stanzas. 3

(d) What part does the speaker of stanza (ii) play in the drama ? 5

3. Translate into Sanskrit :—

25

Then the old servant told his young master how his wicked brother, envying the love all the people bore him, and now hearing the fame he had gained by his victory in the palace, intended to destroy him by setting fire to his chamber that night. He advised his dear master to escape the danger he was in by instant flight. Knowing that he had no money, the faithful servant had brought out with him his own little hoard, and he said, 'I have five hundred rupees, the thrifty hire I saved under your father, and laid by to be provision for me when my old limbs should become unfit for service. Take that, and He that doth the ravens feed be comfort to my age ! Here is the money ; all this I give to you ; let me be your servant. Though I look old I will do the service of a younger man in all your business and needs.'

(Group A.)

SEVENTH PAPER

The figures in the margin indicate full marks.

First Half

Examiner :—MR. HARIHAR BANERJEE, M. A.

1. Discuss the Literary and Ethical Merit of the *Vāsavadattā*. (Give in your own Sanskrit an outline of the plot of the Romance. 15

1. (a) यस्य च रिपुवर्गः सदा पार्थोऽपि न महाभारतरणयोग्यः भीष्मोऽप्यशान्तनवे हितः, सानुचरोऽपि न गोवभूषितः । स विशङ्कुरपि न नाचतपथ्यतः, शंकरोऽपि न विषादी, पावकोऽपि न कृष्णवर्त्मा आश्रयाशोऽपि न दहनश्च नान्तक इवाकस्मादपहतजीवनः न राहुरिव मितमखलघट्टणसंवर्धितरुचिः, न नल इव कालिविजितविग्रहः न चक्रोव भृगाललम्बस्तुतिसमुत्तसितः, नन्दगोप इव यशोदयान्वितः, जरासन्ध इव घटितसन्धिविग्रहः, भार्गव इव सदानभोगः, दशरथ इव सुमिवीपेतः, सुमन्वाधिष्ठितश्च, दिलीप इव सुदक्षिणान्वितः रचिगुप्तश्च, राम इव जनितकुशलवयो-रूपीच्छायः ।

(b) ततोऽनेकनल्लशतमध्वानं गत्वा तेनागस्थयचमसंहरतब्रह्माख्यखण्डगतशिखरसङ्घसः
कन्दरान्तरलतागृहसुसप्रबुद्धविद्याधरमिथुनगीताकर्षणसुखितचमरीगणभारणीतृप्तकशबरकुलसंबधिक -
कृतः. कटकतगतकरिकराकृतभग्नस्यन्दमानहरिचन्दनरसमीदृहरगन्धवाहशिशिरितशिलातलः,
सदूरपतनभग्नतालफलरसाद्रं करतलास्वादनीतृप्तकशाखाश्वगकदम्बकः प्रलम्बमाननिर्भरीपाकीपविष्ट-
जीव जीवकमिथुनलेलिह्यमानविविधफलरसमीदसुरभितपरिसरः शीपर्वत इव सन्निहितमङ्गि-
कार्चुनः नरवाहनदण्ड इव प्रियङ्गुश्यामासनाथः, भीमोऽपि कौचकसुहृत्, पिष्टिताम्बरीऽपि
विलसदंशुकः विन्ध्यो नाम गिरिरट्टश्वत ।

Explain with reference to the context either (a) or (b).

15

3. Translate into English :—

10

अथ वासरताम्रचूडचूडाचक्राकारः चक्रवाकहृदयसंक्रामितसन्तापतयैव मन्दिमानमुहङ्गन्
अक्षगिरिमन्दारस्तवकसुन्दरः, सिन्दूरराजिगञ्जितसुरराजकुम्भिकुम्भविभ्रमं विधाणः, ताखवचखवेगी-
श्लितधूर्जटिजटाजटमुकुटबज्रबन्धुर विकटवासुकिभोगमणिताटङ्गसनाभिमखलः मधुरमधुपूर्वकपाल
इव गगनकपालिनः, अस्त्रानकुसुमस्तवक इव नभःप्रियः, शाक्य इव रक्तायुक्तधरः सुरिगिव संक्षीपेतः,
भगवान् दिनमणिरपराकूपारपरयसि तल्लतङ्गवेगीश्लितविद्रुमविटपाकृतिर्ममञ्ज ।

4. Fully explain the idea given in any two of the following —

6

- (a) बौद्धदर्शनमिव प्रत्यक्षद्रव्यमपङ्गवानम् ।
- (b) न्यायविद्यामिव उद्योतकरखरूपम् ।
- (c) व्याकरणेनैव सरक्तपादेन ।
- (d) धर्मार्थान्धप्रयुक्तः क्षेपणिक इव मुधा वाहिततरवारस्त्वमसि ।

5. (a) अविदितगुणापि सत्कवि-

1

भणितिः कर्षेण वमति मधुधारां ।

अनधिगतपरिमलापि हि

हरति दृष्टं मालतीमाला ॥

(b) अतिमखिने कर्षेः

, भवति खलानामतीव निपुणा धीः ।

तिमिरे हि कौशिकानां

रूपं प्रतिपद्यते दृष्टिः ॥

Determine the figure of speech of either (a) or (b).

4

Second Half

Examiner :—DR. RADHAGOBINDA BASAK, M.A., PH.D.

1. “तदियमात्मदेशाचारोचिता स्वभावसामान्यदृष्ट्या त्यज्यतां सर्वविश्वासिता ।
प्रमाददोषाभिषङ्केषु श्रुतबहुवार्त्त एव प्रतिदिनं देवः ।प्रसक्तानां प्रमदाकृताः प्रमादाः
श्रुतिविषयमागता एव देवस्य ।”

Who is the speaker of the above passage and who the person addressed to ? Cite, after Bāṇa, some of the historical instances of political and moral inadvertences alluded to in the above extract. Can you in this connection suggest any cause of death of Rājyavardhana brought about by the Gauḍa king ?

2. Describe some of the merits and demerits of Bāṇa's writings as evinced in the *Harṣacarita*. 8

Or,

Do you consider the *Harṣacarita* an authentic history of king Harṣavardhana ? State how far the incidents described therein require supplementary facts from other sources to make a fuller history of the emperor.

3. Annotate either of the following passages :— 9

(a) दक्षमानयवषथ तैः प्रविशन्निव निर्यान्तो दत्तसर्वस्वापतेयां गृहीतमरणप्रसाधना
ज्ञानकौन्निव ज्ञातवैदसं पत्युः पुरः प्रवेष्टवन्त्यो.....परिजनेन सत्तापिन च गृहीतसर्वावयवेन परीतां
कुलपुत्रोच्छ्रितेय महत्तरैरधिष्ठितां कञ्चुकिभिः दुःखैश्चातिवह्नेरनुगतां... भवनपादपानपि
परिष्वजमानां मातर ददर्श ।

(b) संऽहमिच्छामि मनसि वाससीव सुलग्नं खेडमलमिदममलैः शिखरिशिखरप्रसवण-
स्वच्छस्रोतोऽम्बुभिः चालयितुमाश्रमपदे । अतस्त्वमन्तरितयौवनसुखामनभिमतामपि जराभिव
पुकराश्रया गुरीर्यं ह्येष मे राज्यचिन्ताम् । त्यक्तसकलबालक्रोडेन हरिणैव दीयतामुरो लज्जयै ।

4. Translate the following *unseen* passage into English :— 25

अनुव्यमानस्य तथा तां सर्वाभित्तिषु पर्यामतिदूरावनतेन शिरसा समग्रथं प्रतिजग्राह ।
कृतातिथ्यया च तथा हितोर्थाश्रयातलोपविष्टया चणमिव तुष्णीं स्थित्वा क्रमेण परिपृष्टो
दिविजयादारभ्य किन्नरमिथुनानुसरणप्रसङ्गे नागमनमात्मनः सर्वमाचक्ष्वे । विदितसंकलहत्तान्ता
चात्याय सा कन्यका भिच्चाकपालमादाय तेषामायतनतटवर्षां तलेषु विचचार । अचिरेण तस्याः
स्वयंपतितैः फलेरपूर्यत भिच्चाभाजनम् । आगत्य च तेषां फलानामुपयोगाय नियुक्तवती चन्द्रापौडम् ।

आसीञ्च तस्य चेतसि । नास्ति खल्वसाध्यं नाम तपस्याम् । किमतः परमाश्चर्यं यदेव
व्यपगतचेतना अपि मचेतना इवास्त्यै भगवत्यै समतिसृजन्तः फलान्वात्मानुग्रहमुपपादयन्ति
वनस्पतयः । चित्रमिदमालोकितमन्त्राभिरदृष्टपूर्वम् । इत्यधिकतरोपजातविध्ययस्योत्थाय तमेव
प्रदेशमिन्द्रायुधमानीय व्यपनीतपर्याङ्गं नातिदूरे संयस्य निर्भरजलनिर्वर्तितस्नानविधिस्नान्यस्तरसस्ना-
दून्मुपभुज्य फलानि पीत्वा च तृषारशिशिरं प्रस्नवणजलमुपस्पृश्यैकान्ते तावद्वतस्थे यावत्तयापि
कन्धकया कृतौ जलफलमूलमयेष्वाहारेषु प्रणयः ।

(Group A.)

EIGHTH PAPER

The figures in the margin indicate full marks.

First Half

Examiner—DR. SATKARI MOOKERJEE, M.A., PH.D.

अन्तिमप्रश्नस्यापरिहारिण तृतीय-पञ्चमयोरन्यतरमपरिहाय च शेषाणां इयं समाधेयम् ।

1. काव्यप्रकाशीय-काव्यलक्षणं विश्वनाथादिभिर्यो दोषः समुद्भावितः स शक्योद्धारो न वा ?
रसस्य काव्यात्मत्ववादी मन्मतस्य सम्प्रतिपत्ती न वा ? आद्ये कथं लक्षणे रसादिपदानामननुप्रवेशः ?
सयुक्तिकमुपपादनं क्रियताम् । किञ्च “सगुणावनलं कृतौ पुनः क्वापि” इति विशेषणोपादानस्य
सार्यकानर्थके स्फुटं प्रतिपाद्य मन्मतस्य गूढाशयः आविर्भाव्यताम् । शब्दाद्यौ इत्यत्र इन्दुयुद्धं
च किमभिप्रायम् ? 15

2. ‘साक्षात् मंकेतितं योऽर्थमभिधत्ते स वाचकः’—इत्यत्र विशेषणद्वयोपादानं किमर्थम् ?
किमत लक्षणद्वयमभिधत्तम् उत एकमेव लक्षणम् ? किञ्च ‘अभिधत्ते’ इत्युपादानेन आत्मा-
शयलक्षणदोषस्य कथं न दुर्धारता ? 15

3. “नहि गौः स्वरूपेण गौर्नाप्यगौ गीत्वाभिसम्बन्धान् गौः” इति वाक्यं किमुपपत्त्येन
उपन्यस्तं प्रकाशकता ? आशयपरिष्कारपूर्वकं प्रकृते सङ्गतिं दर्शय । जातिपञ्चसतुष्टयीपञ्चयोः
कतरस्य सामीचीन्यं कुत्र वा मन्मतस्य निर्भरः इति सयुक्तिकं व्यवस्थाप्यताम् ।

‘प्रयोजनेन सङ्गितं लक्षणौ न युज्यते ।

ज्ञानस्य विषयी ज्ञान्यः फलमन्यदावृतम् ॥”

इति कारिकाया आश्रयं परिष्कृत्य लक्ष्यस्य व्यङ्ग्यार्थप्रतीतिमुपपादयतां मतं दूषयित्वा व्यञ्जनाया अवस्थाङ्गीकरणीयतां निगमय । 15

अथवा

अनुचितार्थविरुद्धमतिकारितयोः, न्यूनपदताऽभवन् मतयोग्यीः, आकाङ्क्षान्यूनपदतयोश्च परस्परमसंकीर्णस्वभावतां प्रदर्शय । किञ्च च्युतसंस्कारादीनां मदमावदोषत्वे बीजं प्रदर्शय दीपसामान्यलक्षस्य पदवाक्यार्थभेदभिन्नेषु अनुगमप्रकारं निदर्शय ।

4. अक्षिपस्य स्वविषये अलङ्कारान्तरबाधकत्ववाचोयुक्तेर्युक्तायुक्तत्वे विचारय । 15

5. “व्यक्तः स तैर्विभावाद्यैः स्थायीभावी रसः स्मृतः ।” इत्यत्र व्यक्त इतिपदस्य कीदर्थः ? साहित्यदर्पणे ‘व्यक्तीदध्यादिन्यायेन रूपान्तरपरिणती व्यक्तीकृत एव रसः’ इति व्याख्यातम् । तच्च मञ्जटादीनां विरुद्धमविरुद्धं वात विचार्यताम् । किञ्च विभवादीनां साधारणस्थापानं रसनिष्पत्तौ प्रयोजकम् इत्यत्र भट्टनायकाभिनवगुप्तयोर्विसंवादाभावतौल्ये अभिनवमतस्य क्वाभिनवत्वम् ? सयुक्तिकमुत्तरं देयम् । 15

6. उपमायाः श्रौत्यार्थभेदेन विभागस्य किं निबन्धनम् ? आर्थत्वे वा कथमुपमात्वम् रूपकानापत्तिश्च ? विश्व ? ‘गौर्वाङ्गीकः’ इत्यत्र गीशब्दस्य गीसदृशलक्षकत्वे ‘गीसदृशी वाङ्गीक’ इति आशौपमायाश्च कुत्र वेलक्षणीयम् ? तदभावे च कथं वानयोर्भेदः, कथं तत्रां वा पृथगलङ्कारत्वम् ? सयुक्तिकं प्रतिपादनं कर्तव्यम् । 15

7. शार्दूलवक्रोडितम्, शिखरिणी, मालिनी, एतेषां वृत्तानां प्रत्येकं लक्षणीटाङ्करणं प्रदर्श्य लक्ष्यलक्षसङ्गतिं प्रदर्शय ॥ 5

Second Half

Examiner—MR. SIBAPRASAD BHATTACHARYYA, M.A.

1. Bring out clearly the issues involved in the following statements : -

3 + 2 + 3 = 8

(i) तुल्यकालब(व)लाप्यतिष्ठेती भावान्तरोदये ।

संसर्गक्षस्य यत्नेन सङ्गरः स निगद्यते ॥

(ii) प्रत्यक्षादिप्रतीतीदर्थो यस्तथा नोपपद्यते ।

अर्थान्तरञ्च गमयत्यर्थापत्तिं वदन्ति ताम् ॥

(iii) या विकाशेऽथ विक्षेपे सङ्गीचे विसरि तथा ।

चेतसी वर्त्तयित्री स्यात् सा वृत्तिः —

Or,

What are the criteria that Viśvanātha would apply to determine whether a particular *bhāva* has been raised to the exalted position of a *rasa* or not? Comment on this attitude of his in the light of the authority of the *Muni* (Bharata). Mention the arguments that would prompt us to enumerate *śūnta* as a *rasa*. Does Viśvanātha posit the presence of *śūnta rasa* in a drama? 8

2. What marks out Viśvanātha's treatment of *rīti* from that of Mammaṭa? Give the central features in the definitions of *rīti* of Bhoja and Viśvanātha, and note its prominent subdivisions according to either. How do you account for its two-fold treatment by the former Master? 8

3. Select *three* verses from the following, and indicate the use that Bhoja or Viśvanātha makes of them, justifying their position in each case :— 9

(i) उपरि घनं घनपटलं दूरे दयिता किमेतदापतितम् ।

हिमवति दिव्यौषधयः कीपाविष्टः फणौ शिरसि ॥

(ii) विजितात्मभवद्वेषिगुरुपादहती जनः ।

हिमापहामिदधरैर्व्याप्तं व्योमाभिनन्दति ॥

iii) लीके नीलतिमायाति लीकेनायात्यधीगतम् ।

अहो सुसदृशी वृत्तिसुलाकोटिः खलस्य च ॥

(iv) ऋदि बि(व)सलताहारो नाथं भृङ्गमनायकः

कुवलयदलश्रेणी कण्ठे न सा गरलव्युतिः ।

मलयजराजी नेदं भव्य प्रियारहिते मयि

प्रहर न हरभान्व्यानङ्ग क्रुधा किमु धावसि ॥

4. Translate into English the verses *either* in Group A *or* in Group B :— 25

Group A

युयुधि शतमन्युना सहोदरैः पितुरश्वं हरताश्चमेधिकं यः ।

अवहासधुतीयवा(वा)णवर्षः कुलिशस्कूर्जयु कीपितः कुमारः ॥

मुमुचे नमुचेरिं स यस्माद्धतश्चस्मात् कृपणोचितेन साम्ना ।

युयुजोऽस्य पिता च तत्प्रसादादविलम्बेन फलेन समतन्वीः ॥

प्रवथाः प्रयथो दिवं दिलीपो रघुर्ध्वो नवयौवनः प्रपेदे ।
 अतिदानरसादसावयष्ट क्रतुना विश्वजिता जिताखिलाभिः ॥
 मखनिष्ठितकल्लसारकोशः कुशचीरावरणोऽर्थिनेऽन्तिमाय ।
 अतभीतनिधौश्वरातिष्ठष्ट वसु बाण्डाधिकाशाय यी दिदेश ॥
 अजयत् क्रमशः शुभाः स भूमौरजहाडूमिभुजां पुनर्जिगीशाम् ।
 अजनामि सते निर्विशितश्रीरजरं धाम जरागमे जगाम ॥
 कुलहञ्जवशिष्टवारिताशुः क्षणदूरीकृतमङ्गलीपचारः ।
 सूतकृत्यमजः पितृभित्तेने विशदब्रह्मपथं गतस्य तस्य ॥

Group B

अथ बन्धसृगं मृगव्यशोलः स नृपः शान्तपुरोगमीऽनुबध्नन् ।
 तुरगेण तरङ्गिणीमवापत्तमसां तापसनिर्मितावताराम् ।
 निचुलान्तरिते पयस्यथास्याः स्तुतसाडम्बरकुम्भपूरशब्दः ।
 खनमूलभिदं ससज्जं सन्नाह् विश्रखं वारणवृद्धिभमेण ॥
 निशिताशुगदूरभिन्नमर्मा मुनिपुत्रः पितृकृच्छकैरुवाच ।
 तमपश्यदुपस्थितः स वेगादवनौशः पविनेव भिद्यमानः ॥
 श्लथबाहुलतीपगूढकुम्भं तमथीवृत्तविलीचनं विलीक्य ।
 बत हा धिगिति भ्रुवन् व्यरोदीहिधुरस्तव तपस्विनीसमूहः ॥
 दुरुपक्रमघोरमर्मशल्यं कृतमङ्कं कथितागसा वृषेण ।
 तनयं तमुपासदश्चरेण प्रवथाः शूद्रमुनिर्दृशा दरिद्रः ॥
 समुपस्थितजीवितान्तबाधः सूतभाण्डस्य वधश्रवादकाण्डे ।
 तत्र पुत्रशुचावसानमित्यं त्वमपीति चित्तिपं शशाप सीऽन्धः ॥

SANSKRIT

(Group B.)

FIFTH PAPER

The figures in the margin indicate full marks.

First Half

*Examiner—*MM. PANDIT GURUCHARAN TARKADARSANTIRTHA, M.A.

अधस्तनप्रश्नेषु प्रथममुत्तरयतावशिष्टेषु द्वयोक्ततरः कार्यः—

1. कन्दः-शास्त्राध्ययनस्य किं प्रयोजनं ? तत्र च किं प्रमाणं ? 20
 2. ऋक्सामयजुषां कीदृशं गायत्री ऋन्दोलक्षणं ? 15
 3. अधस्तनसूत्राणां व्याख्या क्रियता । 15
- (क) उपरिष्ठादुत्तर्यते ।
 (ख) विपरीतौ च
 (ग) दावप्यल्पशः ।

4. कन्दःसु लौकिकस्य वैदिकस्य लौकिक-वैदिकस्य चैकैकमुदाहरणं प्रदर्शय । 15

Second Half

*Examiner—*MM. PANDIT SITARAM SASTRI

1. ऋक्-प्रातिशाख्ये प्रथमपटलारम्भे विद्यमानवर्गद्वयस्य प्रातिशाख्यान्तापातो वर्तते न वा ? तथा ऋक्-प्रातिशाख्येन तस्य समानकर्तृकता भवति न वा ? तदीय टीका प्रातिशाख्यभाष्य-कारिव्युत्संपादिता न वा ? तच्च वर्गद्वयमुल्लटविज्ञातं न वेति साधकवाधकप्रमाणोपन्यासपुरस्सरं विविच्यताम् । 12

2. प्रश्नश्चम् । प्राच्यपदहत्तयः । पञ्चालपदहत्तयः । विज्ञप्तिः । वैहत्तः । नतिः । क्रमः । समयः । यमः । अभिनिधानम् । एषां पदानां पारिभाषिका अर्था उदाहरणप्रदर्शन-पूर्वकमुक्त्वा स्वरभक्त्यर्थं कालमुदाहरणं सप्रमाणं प्रदर्शयत । 12

3. इकारयोश्च प्रश्नेषु चौप्राभिनिहितेषु च । उदात्तपूर्वेषुपि शाकल्यस्य तथा खरित् । महीपीवर्जमितरो यथोक्तम् । खरादेशोऽपूर्वपदेषु । पादचश्च प्रेषान् इति सूत्राणि सीदाहरणं यथाभाष्यं व्याख्येयानि । 12

4. खः । सञ्ज्ञित्ये । चललाभवन्तीः । अत्र सखरं सखत्वं वेष्टकस्वरूपं परिदर्शये, रज्ज्वितम्, भूत्यादौ अत्र सञ्ज्ञिविज्ञेयपदपूर्वकं नरावार्थसंयुक्तयामगोक्तम्, दर्जनायातयन्नमरीयते

नराचशशं दैव्यं च धर्तारि । इत्यत्र क्रमपर्याय-प्रदर्शनगर्भं ब्रह्म, विष्णुः, अ इत्यत्र क्रियमाणा दीपाः
मनामील्लेखं लेख्याः । 12

5. गायत्र्यदीनां कन्दसां नामगोत्रदेवताचरसङ्ख्या-निर्देशपुरस्सरमेकह्यादिलग्नक्रियानिर्देशपूर्वं
पञ्चाक्षरे प्रस्ताव ' S ॥ SS' इदं व्रतं कतिथिमिति सप्रक्रियं निर्णीय प्रदर्शयताम् । 14

(Group B.)

SIXTH PAPER

The figures in the margin indicate full marks.

First Half

Examiner -MR. PANDIT SITARAM SASTRI.

Full Marks—75.

The last question and any two of the remaining are to be answered.

1. प्रायणीयस्य निष्कासं निदध्यात्तमुदयनीयेनाभिनिर्वपेत् । इदं वाक्यं मीमांसानुरीघेन
व्याख्यायताम् । रेखाङ्कितपदानामर्थाय पारिभाषिकां विलिखन्ताम् । ऐतरेयब्राह्मणप्रतिपाद्यं च
संक्षिप्य यथाभाष्यं निरूप्यताम् । 20

2. एकधस्यत्वचमाच्छातात्, प्रशसा बाहू इति वाक्ययोः यथाक्रममेकधा प्रशसाशब्दयोरर्थौ
सप्रमाणं यथाभाष्यं मीमांसकरीत्या प्रदर्शनीयौ । 20

3. हविष्यङ्गिनराशंसर्पङ्गि-यश्शस्वरूपं विविच्य सुमपहृगद् इति वाक्यार्थं यथाभाष्यं प्रदर्शय,
यद्वायवे अधिगायवमाहितं वैष्टुभावा वैष्टुमं निरतश्चत । यदा जगज्जगत्याहितं पदं य इत्तद्विरुद्धि-
मन्मभागी गायत्र्यादिषु गायत्र्यादि-निधानप्रकारपरिदर्शनपूर्वं यथाब्राह्मणं व्याख्येयः ।
भाष्यमप्यनुरीक्ष्यम् । 20

4. यथाब्राह्मणं यागे पशोर्विभक्तिमुल्लिख्य, अनेने समेनसा सोऽभिश्वादेनस्वतो
वापहरादेनः । एकातिथिमपसायं कणश्चि विसानिक्तेनी अपसां जह्मर । एतस्य यथाभाष्यमर्थो
विवरणीयः । 20

5. आज्यशस्त्रस्य भागाभिर्दिश्य, परिसारकम् । धानाः । करम्भः । परिव्रापः । जषाः
समानोदवम् । निविदः । यक्षः । प्रपुशम् । बर्दिच्छानमिति शब्दानां पारिभाषिका अर्था
विलिखन्ताम् । 15

Second Half

Examiner—PANDIT LAKSHMINARAYAN CHATTERJEE, VEDASASTRI, M.A.

Full Marks—25

1. Translate *extract (a)* and *any one* of the remaining three extracts into simple classical Sanskrit, adding notes where necessary to make your translation quite intelligible :—

(a) अथ देवानामसुरी वि राजति वशा हि सत्या वरुणस्य राज्ञः । 9

तत्स्यरि ब्रह्मणा शाश्वदान उयस्य मन्योरुदिमं नयामि ॥

नमस्ते राजन् वरुणास्तु मन्यवे विश्वं क्षाय निचिकेपि दग्धम् ।

सहस्रमन्यान् प्र सवामि साकं शतं जी वाति शरदस्तवायम् ॥

यद्वक्त्रयान् तं जिह्वया वृजन् बह ।

राजस्त्वा सत्यधर्मणी मुञ्चामि वरुणादहम् ॥

मुञ्चामि त्वा वैश्वानरादर्शवान्महतस्यरि ।

सजातानुग्रहा वद ब्रह्म चाप चिकीर्हि नः ॥

(b) सर्वे ह वै देवा अथ सृष्टश्चासुः सर्वे पृथ्यास्तेषां सर्वेषां सृष्टशानां

सर्वेषां पृथ्यानां व्योऽकामयन्तातिष्ठानः स्यामित्यग्निन्द्रः सूर्यः । तेऽर्चन्तः श्राम्यन्त्येकः ।

तएतानतिशान्ना ददृशुस्मानृत्यगृह्णत तद यदेनानृत्यगृह्णत तस्मादतियाह्ना नाम तेऽतिष्ठानोऽ-

भवन् यथतएतदतिष्ठेवातिष्ठेव ह वै भवति यस्यैव विदुष एतान् गृह्णन् गृह्णति । नो ह

वाऽइदमयेऽग्नौ वर्च आस । यदिदमग्निन् वर्चः सोऽकामयतेदं मयि वर्चः स्यादिति स ए

गृह्मपश्यत् तमगृह्णीत ततोऽग्निमेतद वर्च आस । नो ह वाऽइदमयऽइन्द्रोऽग्नौ आस

दियदमग्निर्गोऽग्नौ सोऽकामयतेदं मय्यग्नौ स्यादिति स एतं गृह्मपश्यत् तमगृह्णीत ततो-

ऽखिन्नेतदोज चास । नो ह वाऽइदमये सूर्ये भाज चास । यदिदमखिन् भाजः सोऽकामयतेदं
मयि भाजः स्यादिति स एतं गृहमपश्यत् तमगृह्णीत ततोऽखिन्नेतदभाज चासेतानि ह
तेजाः स्येतानि वीर्याण्यात्मन्वत्ते यस्यैव विदुष एतान् गृह्णान् गृह्णन्ति ॥

(c) अथैनं देवा अन्तरात्मन्याधायामृता भूत्वास्तर्या स्तर्यान्मपदान् मर्त्यान्सुरानभ्यव-
क्त्यै कमग्नौ आदधीत नामृतत्वस्याशान्तास्तर्यो कैव भवति न केनं तुसूर्यमाणयनं कृणते
तच्छादयदाहिताग्निशानाहिताग्निश्च स्पर्धेते आहिताग्निरेवाभिव्यक्त्यार्यो हि स भवति ।
यवादी मर्त्यन्ति तर्दनं जातमभिप्राणिति प्राणी वा अप्रिजातमेनं तज्जनयत्यथोदनिति
तर्दनमन्तरात्मन्याधत्तेऽयेतरमुज्ज्वलयतीह ह्यिषामीह यज्य इह साधु करिष्यामीति । तद्वै-
केषामाग इव भवत्यन्वगन्ति तद् नाद्रियेत न वा अस्येषोऽनुगच्छति योऽस्यान्तरात्मन्याहिती
भवत्यनो व्ययासोऽद्रया व्ययासोत् । अन्तरागादिति कैकेषामाग इव भवति तद् नो एवाद्वियेत
न वा अस्यैतमनो विद्यात न यथा विद्याति नान्तरेत्येति कश्चन योऽस्यान्तरात्मन्याहिती
भवति ।

16

(d) अथ निगदव्याख्याताः । ताननुक्रमिष्यामः । वराहवः स्वतपसः । विद्य न्महसो
अपयः । आपयो गृहमेधायित्वेते । यं चेमेऽग्निमिविद्विषः ॥ पर्जन्याः सम पृथिवीमभिवर्षन्ति
त्रिष्टिभिरिति । एतथैव विभक्तिविपरीताः । समभिर्वातेरुदीगताः । अमूर्त्तौ कामभिवर्षन्ति ।
तेषामेषा भवति । समानमेतदुदकम् उज्ज्वल्य चारुभिः । भूमिं पर्जन्या जिवन्ति दिवं
जिवन्त्याग्रय इति ॥ यदचर भूतज्जत विश्वे देवा उपासते । महर्षिमस्य गोमार
जमदग्निमकुर्वत ॥ जमदग्निराप्यायते कन्दीभिस्तुरुवरैः । राक्षः सीमस्य तपासः ब्रह्मणा

वीर्यावता शिवा नः प्रदिशी दिशः ॥ तच्छ योराहणौमहे गातुं यज्ञाय गातुं यज्ञपतये ।
 देवो स्तस्मिन् नः स्तस्मिन्नुपेभ्यः । ऊर्ध्वं जिगातु मेघजम् । शं नी चस्तु हिपदे शं
 चतुष्पदे ॥

(Group B)

SEVENTH PAPER

The figures in the margin indicate full marks.

Fi st Half

Examiner—MM. PANDIT JOGENDRANATH BAGCHI.

Full Marks—75

मे केचन पञ्च प्रश्ना उत्तीर्यन्ताम् ।

1. उद्दालक चारुणिः पुनः श्वेतकेतुं “स य एषांऽणिमेतदात्मानमिदं सर्वं तत् सत्यं स आत्मा तत्त्वमसि श्वेतकेतो” इति नवकृत्व उपदिदेश ‘प्रत्युपदेश’ भिन्ना दृष्टान्ता आकाशाच्छान्दीग्यो-
 पनिषदि’ किमभिप्रेत्य एक एवापदेशो भिन्नैर्दृष्टान्तेर्नवकृत्योऽभ्यस्यते इति विविच्य लेख्यम् । 15
2. प्राणश्रृङ्गारुंवादः सङ्क्षिप्य लेख्यः । 15
3. न पश्यो मृत्युं पश्यति न रोगं नीत दुःखताम् । सर्वं ह पश्यः पश्यति सर्वमाप्नोति
 सर्वंश्च इति प्रकरणमनुसृत्य श्लोकमिमं विवृणु । 15
4. मधुकाण्डे न सह याज्ञवल्क्योय-काण्डस्य सम्बन्धोऽभिधीयताम् भाष्यरौतिमनुसृत्य ।
 अश्वलप्रश्नप्रतिवचने निरूपणीयं । 15
5. गङ्गातिथ्यदृष्टकृपाणि लेख्यानि । 15
6. आत्मनः स्वयं ज्योतिष् प्रसाधय । 15

Second Half

Examiner -MR. KOKILESWAR BHATTACHARJEE, SASTRI, M.A.

Full Marks—25.

1. Translate into English :—

(a) सत्ये न लभ्य-क्षपसा ह्येष आत्मा,

सम्यग्ज्ञानेन ब्रह्मचर्येण नित्यम् ।

अनःशरीरे ज्योतिर्मयी हि शुभो

यं पश्यन्ति यतयः क्षीणदीपाः ॥

न चक्षुषा गृह्यते नापि वाचा

नाल्यै-देवे-क्षपसा कर्मणा वा ।

ज्ञानप्रसादेन विशुद्धसत्त्व-

सतस्तु तं पश्यते निष्कलं श्यायमानः ॥

एषोऽणुरात्मा चेतसा वेदितव्यो

यस्मिन् प्राणः पञ्चधा संविवेश ।

प्राणैश्चित्तं सर्व्वभूतं प्रजानां

यस्मिन् विशुद्धं विभवत्येष आत्मा ॥

(b) यानि अनवद्यानि कर्माणि. तानि सेवितव्यानि नो इतराणि । यानि अस्माकं सूचयितानि, तानि त्वया उपपत्त्यानि नो इतराणि । अथ यदि ते कर्मविचिकित्सा वा, वृत्तविचिकित्सा वा स्यात् । ये तत्र ब्राह्मणाः समदर्शिनः, यथा ते तेषु वर्त्तेरन्, तथा तेषु वर्त्तेथाः । एष आदेशः, एष उपदेशः ।

(Group B.)

EIGHTH PAPER

The figures in the margin indicate full marks.

First Half

*Examiner :—MR. PANDIT SITIKANTHA VACHASPATI.**Full Marks—75.*

अथस्येषु प्रश्नेषु पञ्च प्रश्नाः समाधेयाः, तत्र च प्रथमः प्रश्नः अवश्यमन्तर्भावनीयः ।

1. उदङ्मुखे कृतस्य प्रचाल्य पाणीपादौ चीपविश्रं विराचामित् द्विः परिसृजित पादावभ्युक्ष्य शिरोऽभ्युचयेत् । इन्द्रियाण्यग्निः संस्पृशेत् । अचिषी नासिके कर्णाविति ।
यद्यन्मीमांसं स्यात्तदग्निः संस्पृशेत् ।

सूत्राणां व्याख्या कार्या, अपिच सरिखस्थाने स एव क्रमो याद्यः क्रमान्तरं वा ? क्रमान्तरं चेत्, कीदृशः क्रमः ? कथं वा स क्रमो याद्यः ? किं वा तत्र प्रमाणं ? अपि च यद्यदित्यत्र वा अन्यत् किमङ्गं स्पर्शनीयं टीकाकारोक्तदिशा निर्णयिताम् । उदगयने पूर्वपक्षे पुण्येऽहनि प्रागवर्धनादङ्गः कालं विधात् । 35

2. सभ्यां पौष्मासीमुपवसेदुत्तरामित्येके । त्रयः पौष्मासीकाला भवन्ति सभ्यावाप्त-
मितोदिता बोधैर्वाऽप्ययदहः पूर्णो भवति । 10

टीकाकारोक्तदिशा संक्षेपेण व्याख्यायन्तां सूत्राणि, उपवासशब्दस्य च कीदृशः ?

3. यद्यु वा उभयं चिकीर्षेदौच्यं वा ब्रह्मत्वञ्चैव तेनैव कल्पेन क्वं वीतरासङ्गं वीदक-
कमण्डलुं दर्भवटुं वा ब्रह्मासने निधाय तेनैव प्रत्याब्रज्याथास्रञ्छेत् । विशदीकृत्य
व्याख्यायताम् । 10

4. अनुमन्त्रिता गुरु गोत्रेणाभिवादयते । कोऽत्र गुरुः ? गोत्रेणेति कस्य गोत्रेण पितु
स्वामिनी वा टीकाकारेणात्र कीदृशं समाधानं कृतम् ? 10

5. पुंसवनसमीपप्रयनसंस्कारौ कस्मिन् समये कर्तव्या ? सुतोह्नेखपूर्वकं दर्शय । 10

6. ब्राह्मणचरित्रविशं उपनयनस्य के मुख्यकालाः ? के वा गौणकालाः ? सर्वेषां
सार्वत्रीपतनस्य वा के कालाः ? सूत्रञ्चेत् क्षुतिपथमारीद्विदुल्लिख्यताम् । 10

7. गोदानिक-व्रतिकादित्यत्र तौपनिषदव्युत्पत्तिसामिकाः संबत्सराः । व्याख्यायतां सूत्रम् । 10

8. अभावस्यायां तच्छास्त्रमितरदन्वाहार्थं मासीनं । सूत्रार्थं व्याख्याहि, तत्पदेन कः
यरावष्टः ? किं वा अन्वाहार्थं विशदीकृत्य लिख्यताम् । 10

Second Half

Examiner :—MR. HARIHAR BANERJEE, M.A.

Full Marks—25

1. Translate into Sanskrit :—

25

(a) Moreover, the difference between Jīva and Īśvara is not unreal, because it is true, by the fact of the imperative assertion of consciousness which says, 'It is'; and moreover, because the functions and activities of the world, as well as the possibility of exertion for getting Mukti, depend upon the reality of this difference. It must not be said that the only reason for believing in this difference is the proof given by one's consciousness and preception, and based upon belief only. It is possible that one's belief may be erroneous, as a person may take a mother-of-pearl for silver; but this false belief of his is liable to be corrected by true perception, when he knows that it is not silver, but a shell. In the case of World and the Jīva however, there is no such false perception. Every one sees this difference, and it cannot be said that all are in error.

(b) Inference is the knowledge of the pervader, following the knowledge of the pervaded, on the part of one who sees the relation of one not being without the other. Hereby all forms of Inference, by agreement, by difference, by agreement and difference, from cause to effect, from effect to cause, from the general to the general are included. The inferential marks mentioned by the logicians are also included herein.

SANSKRIT.

(Group D.)

FIFTH PAPER

First Half

Examiner—DR. S. N. DASGUPTA, M.A., PH.D.

*The questions are of equal value.**Answer any three questions.*

1. प्रातिभासिकरजतसूत्रे: किं निदानं का वा प्रक्रिया, कथं वा सा अन्वदीयप्रक्रियायाः भिद्यते शक्यते वा श्रौमन्निः वेदान्तप्रक्रिया समर्थयितुं ?
2. अहं गज इति प्रतीत्यापादनं कथं निरसनीयं तत् सुनिपुणं व्याख्यायताम् ।
3. श्रुतौ रजतस्य प्रातिभासिकमन्ताभ्युपगमे इदानीमिदं न रजतम् इतिवत् निषेधज्ञानमुदेति न वा ? यदि नोदेति कौटुह्यं तत् निषेधज्ञानं तत् सुनिपुणं व्याख्यायताम् ।

4. नैयायिकानुमानप्रक्रियायाः वेदान्तानुमानप्रक्रियायाः का भेदः ? तादृशभेदकत्वेन वेदान्तसिद्धान्तसाधने कौटुशी बोधयोगिता ?

5. अभावप्रमाणस्वीकारे किं मानम् सीपपत्तिकं प्रदर्शयताम् । बाधध्वंसतुल्यविरोधानां भेदः प्रदर्शनीयः ।

Second Half

Examiner—DR. SATKARI MOOKERJEE, M.A., PH.D.

Answer any three questions of which the last is compulsory,

1. What is the difference between Vācaspati and the followers of the Vivaraṇa school in their conception of the nature of Īśvara ? Fully elucidate in this connexion the function of *avidyā*. 12½

Or,

Fully discuss the logical necessity of *Vṛtti* in perception, and clearly explain how any of the three results is achieved by this—

वृत्तेऽपि दुपरागा वा अर्भदन्त्यक्तिरेव वा फलमावर्तितभङ्गो वा ।

2. Give a critical exposition of the theory of Nṛsiṃha Bhaṭṭa. What is the underlying logical motive of his theory ? 12½

3. Fully discuss the theory of perception as propounded in the Kūṭastha-dīpa, and show if there is any material difference between the Vedāntapāri-bhāṣā and the Pañicadāśī in the matter of the distinction of *jñānapratyakṣa* and *viśayapratyakṣa*.

4. Translate the following passage into English :—

25

उच्चावचमध्यम-सुखदुःखभेदवत्प्राणभूतप्रपञ्चं च सुखदुःखकारणं सुधाविषादि चानेकविधं विरचयतः प्राणभूदभेदोपात्तपापपुण्यकर्माश्रयसङ्घातस्य परमेश्वरस्य न वैषम्यनैर्घृण्ये प्रसज्येते । नहि सभ्यः सभायां नियुक्तो युक्तवादिनं युक्तवाद्यसीति चायुक्तवादिनमयुक्तवाद्यसीति त्रुवाणाः सभापतिर्वा युक्तवादिनमनुगृह्णन् अयुक्तवादिनं च निगृह्णन् अनुरक्तो हिट्टी वा भवति, अपि तु मध्यस्थ इति वीतरागद्वेष इति च आप्त्यायति । तद्वदीश्वरः पुण्यकर्माणमनुगृह्णन् अपुण्यकर्माणं च निगृह्णन् मध्यस्थ एव नामध्यस्थः । एवं ह्युच्चावचमध्यस्थः स्याद् यद्यकल्याणकारिणमनुगृह्णीयात् कल्याणकारिणं च निगृह्णीयात् । नत्वेतदस्ति; तस्यान् न वैषम्यदीवः । अतएव न नेर्घृण्यमपि संहरतः समस्तान् प्राणभूतः । स हि प्राणभूतकर्माश्रयानां इतिविरोधसमयः, तमतिवृत्त्यन् अयमयुक्तकारी स्यात् ।

(Group D.)

SIXTH PAPER.

The figures in the margin indicate full marks.

First Half

*Examiner—MM. VEDANTABISARAD N. S. ANANTAKRISHNA SASTRI.**Full Marks—75.**Answer any three of the following.*

1. अध्यासकारणानि, अध्याससंभावनाम्, अध्यासप्रमाणानि, अध्यासप्रयोजनं च तत्तद्वाक्यवाक्यनिर्देशपूर्वकं सङ्गृह्य जगत्कारणत्वं निर्गुणब्रह्मणः कथं लक्ष्यम् ? इति प्रतिपाद्यताम् । 25

2. निर्गुणत्व-जगत्कारणत्वे, जीवब्रह्मभिद-तन्नेद्वयपदेशौ, जीवनिवृत्त्य-तदुत्पत्तिवयवौ, जीवकर्तृत्व-तदकर्तृत्वे, जीवव्यापकत्वतदुत्क्रान्तिवयवौ, ज्ञायप्रपञ्चमित्याल-तत्स्वाप्नवेधव्ये, ब्रह्मज्ञानरूपत्व-तद्ज्ञानविषयत्वे च कथमुपपद्यन्ते ? 25

3. देवतानां ब्रह्मविद्याधिकारविचारस्य, जीवगत्यागतिविचारस्य, निर्गुणवाक्यप्राधान्ये बह्वतरसगुणवाक्यविचारस्य च किं प्रयोजनम् ? 25

4. अधोलिखितानामधिकरणानां शरीराणि विलिख्यन्ताम् :— 25

(१) आकाशधिकरणम् । (२) अन्तःकरणम् । (३) न स्थानतोऽपि परस्याधिकरणम् । (४) कार्यं वादविरस्याधिकरणम् । (५) अनादित्यधिकरणम् ।

5. वैशेषिक-नैयायिक-सांख्य-पातञ्जलसौगत-जैन-पाशपतपाञ्चगव्यदर्शनानि कस्मिन्नंशे कथं चावैतवादविरुद्धानि ? 25

Second Half

*Examiner—MR. DEBENDRANATH RAY, M.A.**Full Marks—25.*

1. Translate into Sanskrit any one of the following passages :— 25

(a) All human knowledge, when we examine closely into its nature, will be seen to rest on the presupposition of the unity of knowing and being. The consciousness of self is given only in relation to the consciousness of that which is not self. We cannot separate, in any act of thought, the two factors

—the object perceived or thought of, and the subject which thinks it. We may distinguish, but we cannot divide these two, or for a moment conceive an object or thing in itself apart from a thinking subject, or again the latter in abstraction from objects thought of. This very fact proves and rests on the consciousness that there is a unity which lies beyond the distinction.

(b) The world on which we look and of which we form a part is transitory and unsubstantial. Our life is but a vapour that appeareth for a little and then vanisheth away. The transiency of life, the inadequacy of its satisfactions, the insecurity of its possessions, and the lack of any fixed stay on which our thoughts and desires can rest inevitably impel us to seek after a reality beyond the world of shadows, an enduring and eternal rock on which, amidst the stream that bears us away, we may plant our foot. Now the very consciousness of our finitude, as we have seen, indicates that we have already transcended it.

(Group D)

SEVENTH PAPER

First Half

*Examiner :—*PANDIT PANCHANAN TARKABAGIS.

The questions are of equal value.

अधोलिखितेषु प्रश्नेषु द्वयं समाधेयम् ।

1. कर्मज्ञानयोर्विरोधः कया युक्त्या निराकृतौ रामानुजिन ?
सत्यपि प्रतिपाद्यभेदे कथं वा पूर्वमीमांसीत्तरमीमांसयोरैकशास्त्रत्वम् ?
2. अनुभूतेर्ब्रह्मत्ववादं प्रतिविध्य रामानुजमतं प्रतिष्ठापय ।
3. व्यावर्त्तमानत्वस्य मित्यात्व-साधकत्वपक्षं निराकृत्य रामानुजसिद्धान्तमुपवर्णय ।
4. रामानुजमते अयं षटः, अयं पट इत्यादि ज्ञानेन सह व्याख्यानः सम्बन्धप्रतीतिः कया रीत्या भवति ? यदि ज्ञानान्तरेण सम्बन्धप्रतीतिः स्वीक्रियेत, तर्हि तद्योज्ञानान्तरवेद्यतया जडत्वमापद्यते । यदि स्वती भवति, तर्हि सम्बन्धस्याजडत्वं स्यात्, अत्र यः समाधिः, तं प्रदर्शय ।

Second Half

Examiner—MM. PANDIT RAMKRISHNA TARKATIRTHA.

The figures in the margin indicate full marks.

1. असत्कार्यत्वं वितर्कं तत्खण्डनरीतिं प्रदर्शय च अद्वैतब्रह्मसिद्धान्तसत्कार्यं वादनिरसन-
प्रयोजनं विशादौक्यं प्रदर्शयत । 18

अथवा

सत्ताज्ञातिखण्डनरीतिं प्रदर्शय तदस्वीकारे “सन् घटः” ‘सन् पटः” इत्याद्यनुगतव्यव-
हारीपपत्तिप्रकारं प्रदर्शयत ।

2. वैभाषिक-मौढान्तिकयोर्मतं प्रतिपाद्य निराक्रियतां । 16

3. विष्णुप्रतिविम्बयोर्भेदमुल्लिख्य प्रतिविम्बवादः व्याख्यायतां । 16

अथवा

जीवेश्वरयोर्भेदमुल्लिख्यावच्छेदवादः व्याख्यायतां ।

(Group D.)

EIGHTH PAPER

The figures in the margin indicate full marks.

First Half

Examiner :—MR. KOKILESWAR BHATTACHARYYA SASTRI, M.A.

1. Expressions drawn from the Upaniṣads occur throughout in the Gītā, but the theism of the *Bhāgavata*-type is also mixed with it. Some scholars think that there is also the *Sāṅkhya*-current of thoughts in it. 9

Substantiate these statements.

2. write a short essay on the main characteristics of the Karma-Yoga / कर्म-योग) as taught in the Gītā. 8

3. Explain after Śaṅkara three of the following stanzas :— 9

(a) गतसङ्गस्य मुक्तस्य ज्ञानविषयतश्चेतसः ।

यज्ञायाचरतः कर्म समयं प्रविलीयते ॥

- (b) प्रकृत्यैव च कर्माणि क्रियमाणानि सर्वशः ।
यः पश्यति तथात्मानमकर्तारं स पश्यति ॥
- (c) अचरं ब्रह्म परमं स्वभावीऽध्यात्ममुच्यते ।
भूतभावीऽवकरो विसर्गः कर्मसंज्ञितः ॥
- (d) ज्ञानं ज्ञेयं परिज्ञाता त्रिविधा कर्मबोदना ।
कारणं कर्म कर्त्तृति त्रिविधः कर्मसंयुग्मः ॥
- (e) कर्मण्यकर्म यः पश्येदकर्मणि च कर्म यः ।
स बुद्धिमान् मनुष्येषु स युक्तः कृत्स्नकर्मजित् ॥

4. In the dialogue between Śvetaketu and his father, the original *sat* (सत्) which is described as the source of the world is suddenly identified with the self of Śvetaketu. 8

Explain clearly why such identification has been thought necessary.

5. Show that Idealistic Monism is the prevalent teaching of the Cāndogya Upaniṣad. 8

6. Describe the characteristics of dreamless sleep (सुषुप्ति), and show also that in this condition the finite self attains a temporary union with the Absolute. 8

What necessity is there to postulate another state—Turiya (तुरीय) ?

Second Half

Examiner—MR. KOKILESWAR BHATTACHARYA, SASTRI, M.A.

1. Mention, after Śaṅkara, any two of means for the realization of the self as given in the Kāṭha-Upaniṣad. 5

2. Take the following *Mantra* :— 5

एष सर्व्वेषु भूतेषु गृद्धोऽऽत्मा न प्रकाशते ।

दृश्यते स्वयया बुद्ध्या सूक्ष्मया सूक्ष्मदर्शिभिः ॥

In explaining this *Mantra*, Śaṅkara observes :—

“अद्वो विचित्रा चेत्यं “माया”, यदयं सर्व्वो जन्तुः परमार्थतः अद्वं परमात्मेति न गृह्णाति, अनात्मानं देहेन्द्रियादिसंघातं आत्मनो दृश्यामानमपि घटादिवदात्मत्वेन गृह्णाति” ।

Fully explain the above observation, and give the nature of the theory of *अध्यात्म* in this connection.

3. “अत्र केचिद्वाचयन्ते—आत्मवस्तुनः स्वत एव एकत्वं ज्ञानात्वं च । यथा गीर्गोद्व्यतया एकत्वं, साक्षादीनां धर्माणां परस्परतो मन्दः । तद्वदेव दृष्ट्यादीनां परस्परं नानात्वं, आत्मना च एकत्वम्” ।

Give the arguments by which Śaṅkara seeks to refute the above view of his opponent. 5

Or,

“नहि यो यस्य विवेकेन यहीता स तस्मिन् भ्रान्त इत्युच्यते ; तस्य च विवेकशङ्कः, तस्मिन्नेव च भ्रान्त इति विप्रतिषिद्धम्” ।

In what connection does this भाष्याश्च arise ? How does the Bhāṣya-kāra establish the above contention ? 5

4. In the discourse between उषस्त and याज्ञवल्क्य, Sankara explains two kinds of दृष्टि,—लौकिकी and पारमार्थिकी .

Elaborate his idea. 5

5. In the Brhadāranyaka Upaniṣad, the number of the देवताs has been shown to be 33. How is this figure arrived at ? Can this number be further reduced ? If so, how ? 5

6. Translate into English :— 25

बुद्धिश्चैव चेतने सुषुम्नादौ विषयसम्बन्धाभावादेव विषयाज्ञानीपपत्त्या, तदानीं ज्ञानाभावे प्रमाणाभावात्, चैतन्यनित्यत्वमेव लाघवाद्नुमीयते । न च विषयवासनावत्त्वात् विषयसम्बन्धसदानीमपि अस्तीति वाच्यम् । ‘स यत्र किञ्चित् पश्यति अनन्वागतस्तेन भवति’, ‘असङ्गी ह्ययं पुरुष’ इत्यादिश्रुत्या, आत्मनो वासना-लेपादिपर्यायस्य सङ्गस्य प्रतिषेधात् । अथैवं ज्ञानस्य नित्यत्वे, ‘घटज्ञानं नष्टं’ ‘पटज्ञानं जातं’ इत्यादिबृहन्नानी प्रपञ्चेरन् इति चेत्, न । गुहा-कूपादीनां विनाशोदप्रत्ययवत् विशेषणनाशेन उपपत्तेः । विशेषणस्य विषयतासम्बन्धेन घटादि, घटादौ च विषयता आत्मप्रतिबिम्बित बुद्धिदृष्टिनिव्याप्यत्वमिति । अथ तथापि ‘जानामीति’ आधारविषयप्रत्ययानुपपत्तिर्ज्ञानात्मनोर्भेदाभावात् इति चेत् ? न । केवलज्ञानस्य लौकिक-प्रत्यक्षागोचरत्वात्, आकाशे श्रोत्रमित्यादिवत् आत्मनि घटादिज्ञानमिति आधारविषयताप्रत्ययीपपत्तेः । तच्चादृष्टं प्रतिपुरुषमेकैकमेव नित्यं वस्तु ‘राज्ञोऽग्निः’ इत्यादिवत् धर्म-धर्मिभावेन कस्यमानं ज्ञानमिति ज्ञातेति च उच्यते । नास्त्यत्र गुह्य-गुणिभावः ।

SANSKRIT.
(Group E.)
FIFTH PAPER

The figures in the margin indicate full marks.

First Half

Examiner—PANDIT KUNJABIHARI TARKATIRTHA.

1. वस्तुस्थित्या न बन्धोस्ति तदभावाद् सुकृता । 20

विकल्पघटितावेतादुभावपि न किञ्चन ॥

उल्लिखितश्लोकीपन्यासेन वृत्तिज्ञता कुत्र कौटुशं पलं साधितम् ? एवमेतत् श्लोकप्रति-
पादितार्थः सांख्यमतसिद्धी न वा ? सांख्यमतसिद्धयेत् सांख्यमते मीमांसानोपदेशः कथं न
निरर्थकः ?

2. शून्यवादिमतं संस्थाप्य सूत्रवृत्त्युक्त्यादिभिस्तत् खण्डनं क्रियताम् । 12

अथवा

सूत्रवृत्त्युक्त्यादिभिः पुरुषबहुत्वं साधनीयम् ।

3. निम्नलिखितसूत्रेषु यथाकामं चतुर्णां प्रकृतीपयोगित्वव्यापकं वृत्त्युत्सारि-व्याख्यानं
लिख्यताम् :— 18

- (१) समानं प्रकृतेदयोः ।
- (२) चेतनोद्देशान्त्रियमः कष्टकमीश्वरः ।
- (३) चक्रधमणवसुतशरीरः ।
- (४) अध्यस्तकपोपासनात्पारम्पर्येण यज्ञोपासकानामिव ।
- (५) नेत्रराधिते फलसम्पत्तिः कर्मणा तत्सिद्धिः ।
- (६) आधियशक्तिसिद्धौ निजशक्तियोगः समानन्यायात् ।
- (७) षोडशादिष्वप्येवम् ।
- (८) जगतसत्यत्वमदुष्टकारणजन्यत्वाभाषकाभावात् ।

Second Half

Examiner—DR. PRABHATCHANDRA CHAKRABARTI, M.A., PH.D.

1. *Either,* 12½

Enumerate the arguments whereby 'सत्कार्यवाद' is maintained by the
Sāṅkhya *Kārikās*. How would you set aside the opposite view
(बौद्धादीनामसत्कार्यम्) ?

Or,

(a) Comment on the following :—

12½

अज्ञानात्मेति, यतः सर्वो विज्ञानविज्ञांश्च संसारसन्तानश्चयमिच्छति। एवमेभिर्हेतुभिरस्यात्मा
शरीराद्यतिरिक्तः ।

(b) Fully bring out the significance underlying the examples of 'पङ्क-स्वन्ध'
(lame and blind).

2.

Either,

12½

Discuss the position of Sāṅkhya as a system of spiritual discipline.
Why Sāṅkhya and Yoga are said to be allied ? Give reasons for your answer.

Or,

Explain the following *Kārikā* according to the *Bhāṣya* :—

12½

कारणमकण्व्यक्तं प्रवर्त्तते त्रिगुणतः समुदयाच्च ।

परिणामतः सलिलवत् प्रतिप्रतिगुणाश्रयविशेषात् ॥

3. Translate the following extracts into English :—

25

(a) एवमेषां व्यक्ताव्यक्तज्ञानां त्रयाणां पदार्थानां कैः कियद्भिः प्रमाणैः केन कस्य वा
प्रमाणेन सिद्धिर्भवति ? इह लोके प्रमेयवस्तु प्रमाणेन साध्यते यथा—प्रस्थादिभिर्त्रैविध्यस्तुलया
चन्दनदि ।

(b) यथादकर्ता पुरुषस्तत् कथमध्यवसायं करोति धर्मं करिष्याम्यर्धमं न करिष्यामीत्यतः
कर्ता भवति, न च कर्ता पुरुष एवमुभयथा दोषः स्यात् ।

(c) कश्चित् परोपकारी सर्वस्वीपकुरुते नात्मनः प्रत्युपकारमीहते, एवं प्रकृतिः पुरुषार्थं
चरति करोत्यपार्थक्यं, पश्चादुक्तमात्मानं प्रकाशयति निवर्त्तते ।

(d) तमिममर्थं प्रामाणिकं कर्तुमभिमताः प्रमाणमेवा लक्षणीयाः । न च सामान्य-
लक्षणमन्तरेण शक्यं विशेषलक्षणं कर्तुमिति प्रमाणसामान्यं तावद्वक्ष्यति ।

(e) आत्यन्तिकी दुःखत्रयनिवृत्तिः कैवल्यम् । सुखी हि सुखेन तप्यन् दुःखी हि दुःखं
दृष्टवन् न मध्यस्थो भवति । तदुभयरहितस्तु मध्यस्थ इत्युदासीनः । विवेकित्वादप्रसुवधर्मित्वा-
श्चाकर्त्तव्येति सिद्धम् ।

(Group E.)

SIXTH PAPER

The figures in the margin indicate full marks.

First Half

Examiner—PANDIT GURUCHARAN TARKADARSANTIRTHA, M.A.

अधस्तनप्रश्ने प्रथममुत्तरयतावशिष्टेषु ह्यधीरुत्तरं कार्यम् ।

1. आत्मविशेष्यकविवेकज्ञानं माचक्षेत्तरिति सांख्यसारमते को विवेकः ? तज्ज्ञाने च क उपायः ? तज्ज्ञानस्य माचक्षेत्तुर्वे च किं प्रमाणं ? का च तत्र युक्तिः ? 20
2. ईश्वरासिद्धिरिति सूक्ष्म्याने क उपपत्त्यः ? ईश्वराभावादित्यनुक्ता ईश्वरासिद्धिरित्युक्तौ स्वकृता कोऽभिप्रायः ? 15
3. अनिर्व्याख्याविद्याखण्डने सांख्यककल्पता का युक्तिः ? 15
4. चणिकविज्ञानवादः कया युक्त्या केषां सम्यक्तः ? तत्खण्डने च सांख्यसम्यक्ता युक्तिः कीदृशी ? 15

Second Half

Examiner—MR. NALINIMOHAN MUKHOPADHYAYA SASTRI, M.A.

Three questions are to be attempted, of which the first must be one.

1. Translate into Sanskrit *any two* of the following extracts:— 25
 - (a) It is not too much to say that every indication of design in the cosmos is so much evidence against the omnipotence of the designer. Wisdom and contrivance are shown in overcoming difficulties, and there is no room for them in a Being for whom no difficulties exist. The evidences therefore of Natural Theology distinctly imply that the author of the cosmos worked under limitations: that he was obliged to adapt himself to conditions independent of his will and to attain his ends by such arrangements as those conditions admitted of.
 - (b) Explanation, in its most general sense, means, for science, the statement of a fact in its simplest terms, so that it can be assimilated to other facts and included as a case of what we call a general law. We are said to understand a fact when we are able to regard it as a particular example of a mode of happening already known to us. Explanation also means, in scientific usage, a statement of the conditions of the occurrence of any fact. Such causal explanation, as it is often called, consists in the discovery of some antecedent set of circumstances on which the given phenomenon follows and on which it appears to depend.

(c) The word cognition misleads us by its exclusive reference to the object as something external; we forget that cognition is an experience of the soul, and as such has necessarily its feeling-value. We forget that the existence of such living centres, capable of feeling the beauty and grandeur of the world and tasting its manifold qualities, is what is really significant in the universe. To a collocation of purely unconscious facts it would be impossible to attribute any value either collectively or individually. All values, in this sense, are conscious values.

2. What are the three kinds of sorrow? If they are real, how are they removable? Discuss, in this connection, the end aimed at by the *Sāṅkhya*s and the means of attaining it. 12½

3. Explain the exact nature of the three *Gunas*. *Prakṛti* is said to have a complex unity on account of these *Gunas*, which, 'in the case of individuals, must be admitted to be infinite'. 'Prakṛti is *one* only as the ultimate cause of the universe as a whole.' Discuss this after the manner of Vācaspati Miśra. 12½

4. How can Prakṛti be dynamic and how can there be *Samyoga* between *Puruṣa* and *Prakṛti*, both being all-pervasive? Discuss the standpoints of both Vācaspati Miśra and Viṣṇu Bhikṣu on this question. 12½

5. What purpose does evolution serve in the case of (1) *Puruṣa*, and (2) *Prakṛti*? Explain the conceptions of space and time by those who hold the *Abhivyaktavāda* theory. 12½

(Group E.)

SEVENTH PAPER

The figures in the margin indicate full marks.

First Half

Examiner—MM. PANDIT SITARAM 'SASTRI.

Only five questions to be answered but no group should be left out.

Group A.

1. परिणामतापसंस्कारदुःखैर्गुणविरोधाच्च दुःखमेव सर्वं विवेकिनः । कृतार्थं प्रति नष्टमप्यनष्टं तदन्वसाधारणत्वात् । यथाभाष्यमिदं स्वतथं व्याख्याय सप्तोद्देशं दृश्यस्वरूपं यद्यभाष्यं विव्रियताम् । 15

2. विशोकाविषयवत्वीः प्रवृत्तीरसङ्कीर्णं स्वरूपे सूक्ष्मसाधुपुरस्सरं फलनिर्देशगर्भं प्रदर्श्य कायस्याशुचित्तनिदानानि सम्यक् निरूप्याणि । 15
3. स्वमतविभेदं यथाभाष्यमदर्शनस्वरूपं विविच्य चक्षुतत्कृमस्वरूपनिर्णयपुरस्सरं तत्संयमफलं विलिख्यताम् । 15
4. सोदाहरणं कारणस्य नवविधत्वं निर्दिश्य योगस्य किं फलं प्रति कौटुम्बिकं कारणत्वमिति प्रदर्श्य सफलं चित्तपरिकर्म निरूप्यताम् । 15

Group B.

1. मत्तान्तरोल्लेखपुरस्सरं वार्तिककारमतेन ससूत्रं योगलक्षणं परिक्रियताम् । सम्प्रज्ञातसमाधिः सोदाहरणं भेदान्निर्दिश्य आनन्दानुगतभेदस्य द्वैविध्यविषये भिद्युतदन्वयमते विविच्य प्रदर्शनीये । 15
2. मत्तान्तरप्रदर्शनगर्भं भिद्युतमतेन योगस्यासाधारणं फलं सप्रमाणं निरूप्यताम् । निरीश्वरसाङ्गारोत्यैव सर्वेश्वरं विनैवोपपत्तौ योगपक्ष ईश्वरस्वीकारावश्यकता वर्णनीया । 15
3. वेदान्तिसम्प्रदायैतस्वीकारे कानुपपत्तियोगमते भिद्युतसम्प्रदायः ? कथं चात्मनानात्वं निर्णयं योगपक्षे ? काव भिद्युतः प्रतिपत्तिः ? 15

Second Half

Examiner—MR. KOKILESWAR BHATTACHARYYA, SASTRI, M.A.

Question 6 is compulsory, and any three of the first 5 questions.

1. How does the Yoga-philosophy establish the existence of God (Īśvara) ? Is it essential to this system ? Mention His nature (स्वरूप), His proof (प्रमाण), and His worship (उपासना)—as given therein. 8½
2. Explain, after the manner of Yoga-bhāṣya, the three modifications (परिणाम), showing their relation to the धर्मी, i.e. that which is endowed with a property. Explain that 'the धर्मी differs and does not differ from itself' ('धर्मिणश्च भिन्नाभिन्नतया सर्ववानुगमः'). 8½
3. The *Bhaja-vṛtti* contains the following observation :— 8
 "अत्यन्तमसतां भावानामुत्पत्तिर्न युक्तिमती"
- State all the arguments by which the commentator reaches this conclusion.
4. How does the Yoga-philosophy prove that the sense of a word (शब्द) is always different from the letters (वर्ण), making that word ? 8½

5. There are two theories about the mind (चित्तं), viz. it is atomic and it is all-prevading. Examine these two views and show which of the two you prefer.

In this connection, answer the following :—

'Do the things exist apart from the mind or they do not exist independent of the mind, i.e. the act of cognising?' 8½

6. Translate into English :—

25

एतद्गुणवयमेव कार्यकारणभावापन्नं दृश्यमुच्यते. नास्ति ततोऽतिरिक्तं दृश्यान्तरम् । अतएव च गुणा न्यायवैशेषिकाभ्यां द्रव्याष्टकरूपेण विभज्यन्ते । वेदान्तिभिस्तु मायैव्युच्यते । 'मायान्तु प्रकृतिं विद्या' इति श्रुतेः । तदुक्तं ब्रह्मशिष्टे—“नामरूपविनिर्मुक्तं यस्मिन् संतिष्ठते जगत् । तमाहुः प्रकृतिं केचित् मायामन्त्रे परे त्वष्टृन्” । स्यादेतत्, यदि विगुणातिरिक्ता प्रकृतिर्नास्ति तदा अजामेकां लोहितशुक्लकृष्णमित्यादि श्रुत्युक्तं प्रकृतेरेकत्वादिकं व्याह्रन्ते । तथा—“हेतुमदनित्यमव्यापि सक्रियमनेकमाश्रितं लिङ्गम् । सावयवं परतन्त्रं व्यक्तं विपरीतमव्यक्तं”-मित्यादिना उक्तो व्यापकत्वाक्रियत्वनिश्चयवत्त्वादिरूपस्य सांख्येयसिद्धान्तो व्याह्रन्ते । तथा,—‘एते प्रधानस्य गुणास्त्रयः स्युरनपायिनः इत्यादि-श्रुतिपरम्परासु प्रधानस्य गुणानां च आधाराधेय-भावहेतुहेतुमद्भावयोर्वचनं नीपपद्यते । ‘तथा सत्त्वं रजस्तम इति गुणाः प्रकृतिसम्भवा’ इति गीतादिवाक्योक्तं सत्त्वादिः प्रकृतिकार्यत्वं च अनुपपन्नम् । अत्र उच्यते । पुरुषभेदेन सर्गभेदेन च भेदाभावपव प्रकृतेरेकत्वमजादिवाक्यैस्तन्मूलकसांख्येयसिद्धादिभिः प्रतिपाद्यते, अजावाक्ये तथा तात्पर्यावधारणात् । भोक्तारस्तु पुरुषाः भोक्तृत्वाभोक्तृत्वाभ्यां सर्गभेदेन भिद्यन्ते । अतः प्रकृतिरेका पुरुषस्त्वनेक इत्युच्यते ।

(Group E.)

EIGHTH PAPER

The figures in the margin indicate full marks.

First Half

Examiner—MR. PANDIT DURGACHARAN SANKHYAVEDANTATIRTHA.

प्रथममुत्तीर्त्य शिष्टानां वयमुत्तार्यम् ।

1. “नन्वोऽनुभास्यो बुद्ध्यास्ति तस्या नामुभावोऽपरः ।

16

यास्त-यास्तकवैधुर्यात् स्वयं सेव प्रकाशते ॥”

केन किमर्थमियं कारिका समुच्यता ? प्रकृतार्थोपयोगियुक्तिप्रदर्शनपूर्वकं कारिकेयं विशदं व्याख्यायताम् ।

2. 'विशिष्टाद्वैतवाद' पदस्य यौगिकोऽर्थः कौटुक ? स च कथा रीत्या रामानुजामितं सिद्धान्तमुपोद्बलयति ? रामानुजमते जीव-परमात्मनोः, बन्ध-मोचयोः, तत्साधनयोश्च स्वरूप-यथासम्भवं विभागश्च निरूप्यताम् । 16

3. "विपदार्थं चतुष्पादं महातन्त्रं जगद्गुरुः । 16

सर्वेष्वेकेन संचिप्य प्राह विस्तरतः पुनः ॥"

पदार्थविश्लेषणपूर्वकं श्लोकोऽर्थं भाष्यरीत्या व्याख्यायताम् । अत्र 'जगद्गुरुः' कः ? 'महातन्त्रं' पदेन, 'सर्व' पदेन च कोऽर्थः परावृण्यते ? "प्राह विस्तरतः पुनः" कुत्र ? इत्येतत् सर्वं तरिसिद्धान्तानुसारेण निरूप्यताम् ।

4. श्रम्योक्तदिशा दृष्टाव्युत्पत्तौ नव चणान् निर्दिश्य, समवाय-समवायि-निमित्तकारणानि च नामती निरूप्य, दृष्टाव्युत्पत्तिपरिमाणोत्पत्तौ तत्संरूपपरिमाणोत्पत्तौ च यत् कारणं, तदपि निर्दिश्यताम् । 16

5. "असदकरणादुपादानग्रहणान् सर्वसम्भवाभावात्

शक्त्यस्य शक्यकरणात् कारणभावाच्च सत् कार्यम् ॥"

18

पदपदार्थनिरूपणपूर्वकं कारिकेयं तथा व्याख्यायताम्, येन प्रदर्शितेहेतुभिः सत्कार्यवादी निरुपपत्त्यो भवेत् । सत्कार्यवादासिद्धौ सांख्यग्रन्थे कानुपपत्तिरुत्पद्यते ? तदपिनिरूप्यताम् ।

Second Half

Examiner—DR. SATKARI MOOKERJEE, M.A., PH.D.

Attempt any three questions of which the last must be one.

1. Fully discuss the philosophical import of the following extracts :— 12½

अश्लेषेण परित्यागी वासनानां य उत्तमः ।

मोक्ष इत्युच्यते ब्रह्मन् स एव विमलकमः ॥

क्षीणायां वासनायानु चेतो गलति सत्वरम् ।

क्षोणायां शीतसन्तत्यां ब्रह्मन् हिमकणो यथा ॥

2. Give a summary account of the evils of childhood and youth as dilated upon in the Yogavāsiṣṭha. What do you think to be the underlying motive of such denunciations ? Does the Yogavāsiṣṭha seek to preach a philosophy of pessimism ? 12½

3. Give a critical evaluation of the philosophy sought to be propounded in the couplet—

12½

‘यश्च द’ दृश्यते किञ्चिज्जगत् स्यावर-जन्मम् ।

तत्सर्वमस्थिरं ब्रह्मन् स्वप्नसङ्गमसन्निभम् ॥

4. Translate the following into Sanskrit :—

25

United with his fellow-men by the strongest of all ties, the tie of a common doom, the free man finds that a new vision is with him always, shedding over every daily task the light of love. The life of man is a long march through the night, surrounded by invisible foes, tortured by weariness and pain, towards a goal that few can hope to reach, and where none may tarry long. One by one, as they march, our comrades vanish from our sight, seized by the silent orders of omnipotent Death. Very brief is the time in which we can help them, in which their happiness or misery is decided, Be it ours to shed sunshine on their path, to lighten their sorrows by the balm of sympathy, to give them the pure joy of a never-tiring affection, to strengthen failing courage, to instil faith in hours of despair. Let us not weigh in grudging scales their merits and demerits, but let us think only of their need—of the sorrows, the difficulties, perhaps the blindnesses, that make the misery of their lives ; let us remember that they are fellow-sufferers in the same darkness, actors in the same tragedy with ourselves.

SANSKRIT

(Group F.)

FIFTH PAPER.

The figures in the margin indicate full marks.

First Half

Examiner—PANDIT PANCHANAN TARKABAGIS.

अर्धो लिखितेषु प्रश्नेषु द्वयं समाधेयम् ।

1. प्रमात्वनिययात् प्राक् किं प्रामाण्यनिययः ? उत प्रामाण्यनिययात् परतः प्रमात्वनिययः ?
अथ यः सिद्धान्तानुपवर्त्य । 2½
2. आर्त्तचिकी-शास्त्रस्य निःशेषोपयोगित्वं यत् तत्त्वज्ञानान्निःशेषं भवति, तादृगात्मतत्त्व-
प्रतिपदनमावस्यावश्यकं नैव्यतया अभावश्च कथं यथादि-पदार्थप्रतिपादनस्य किं बीजम् ? 2½

३. प्रत्यक्षागमाविरुद्धाद्युमानस्य न्यायत्वे अद्युमानविरुद्धाद्युमानस्य न्यायत्वं कथं न प्रसज्यते ?
तस्य प्रत्यक्षागमाविरुद्धत्वात् । 25

4. नादजन्यधीर्लक्ष्यं कीदृशम् ? 25

'प्रमाणतर्क-साधनीपालम्' इति विशेषणपदस्य लक्ष्यमिदं अर्थगतवैषम्यं वर्तते न वा ?
वर्तते चेत्, कीदृशं तवैषम्यम् ?

Second Half

Examiner—PANDIT VANAMALI CHAKRABARTI, VEDANTATIRTHA, M.A.

1. What is the conception of God in the Nyāya system of philosophy ? What is His relation with the world of mind and matter ? Compare *Akṣapāda's* opinions with those of other philosophers, noticed and refuted in the *Nyāya Sūtras*. Quote *Sūtras* in support of your statements. 13

Or,

Explain *Akṣapāda's* doctrine of perception (प्रत्यक्ष) and inference (अनुमान) and fallacies (द्वैतबाध), quoting *Sūtras*. How would he account for the knowledge of Universal propositions such as the moderns derive from induction ? 13

2. Explain the following with reference to the context :— 12

(a) अथ च विशिष्याहस्यप्रकारकत्वतश्च तत्प्रकारकत्वादिप्रमाणलक्षणात्मिकं लक्ष्यं परं च लक्ष्यतावच्छेदके निवेशनीयमती नाभिदः । (१ । १ । ७) ।

(b) युगपज्ज्ञानानुत्पत्तिर्भवसी क्षिप्तम् । (१ । १ । १६)

(c) विकारादेशीपदेशात् सशयः (२ । २ । ४१)

(d) अभावात् भावोत्पत्तिर्नानुपपद्य प्रादुर्भावात् (४ । १ । १४)

(e) निर्दिष्टकारणाभावेऽपि उपलब्धात् उपलब्धिसमः (५ । १ । २७)

Or,

What is a 'point of defeat' (निगृह्यमान) ? Can you assign any reason why it should find a place in *Golama's Sūtras* which constitute a system of logic and philosophy ? Give a summary of अपवर्गपरीक्षाप्रकरण. It is the same as निःशेष ? 12

3. Translate any two of the following into English :— 25

(a) चार्वाकस्तु भवतु चेतनधर्मीऽदृष्टं चेतनस्य न नित्यविशुः किन्तु कायाकारपरिणत-
भूतविशेषः गौरीऽहं जानामि इति प्रतीत्यः रूपवत्त्वसिद्धेः इत्याह ।

नान्यदृष्टं अस्त्यन्ती नैकं भूतमपक्रमात् ।

वासनासंक्रमी नास्ति ।

(b) तत्त्वज्ञानेन समूलमिथ्याज्ञाने निरस्य दीपस्य रागद्वेषादिसत्कार्यस्यानुत्पत्तिः । रागादिकं प्रति तादृशमिथ्याज्ञानस्य हेतुत्वमन्वयव्यतिरेकाभ्यां शीघ्रम् । न च तत्त्वज्ञानिनामपि रागादिदर्शनात् कथं तत्र मिथ्याज्ञानस्य हेतुत्वमिति वाच्यम्, विजातीयरागादिकं प्रति एव तस्य हेतुत्वात् । अतएव श्रीभगवद्गीतावचनम्—अज्ञानेनावृतं ज्ञानं तेन मुह्यन्ति जन्तवः ।

(c) परमकारुणिकी हि मुनिः जगदेव दुःखपङ्कजप्रमुह्निर्धौर्गन्धर्वः शास्त्रं प्रणीतवान् । तत्र यदि कश्चित् न प्रवर्त्तते किमायातं शास्त्रस्य ? न वानधिकृतव्युत्पादनेनास्य तपोनिधेः कश्चिददीपः । तथा च विश्वामित्रस्त्रिशङ्कुं याजयामास वसिष्ठश्चाधमयोनिजामक्षमालामुपयेमे । ततः प्रभावी हि तादृशक्षेत्रां यत एवविधाः पाप्मानो विलीयन्त इति । न चाख्यदादीनां मन्दतपसामर्थं प्रसंगः ।

(Group F.)

SIXTH PAPER.

The figures in the margin indicate full marks.

First Half

Examiner—MM. PANDIT JOGENDRANATH BAGCHI.

अथः प्रश्नाः समाधेयाः

प्रथम प्रश्नः समाधेयः इतरेषु द्वौ समाधेयो ।

1. ग्रन्थज्ञातसम्मतं प्रत्यक्षलक्षणमुल्लिख्य पराभिमतप्रत्यक्षलक्षणानि निराकृत्य ग्रन्थज्ञातसम्मतौत्या । 20
2. श्रुतेः प्रामाण्यवारणे ग्रन्थज्ञातां प्रयासः किमर्थः ? कया रीत्या वा श्रुतेः प्रामाण्यं निवारितं ग्रन्थज्ञाता ? 15
3. “अपरे पुनरविसम्बादकत्वं प्रमाणसामान्यलक्षणमाचक्षते” इदं लक्षणं केषां सम्मतं कौटिल्यस्य विसम्बादकत्वं कया युक्त्य लक्षणमिदं खण्डितं श्रीमता जयन्तभट्टेन ? 15
4. शावराणामभिमतं प्रमाणलक्षणमुल्लिख्य श्रीमज्जयन्तभट्टमतमवलम्ब्य निरस्यताम् । 15
5. अभावप्रामाण्यमुपपाद्य निरस्यतां जयन्तभट्टमतमनुसृत्य । 15
6. अभावस्य वस्तुत्वमवस्तुत्वं वेति सम्यगालोच्य लिख्यताम् । 15
7. बौद्धसम्मतं व्याप्तिपक्षीपाथं निराकृत्य स्वसम्मतं व्याप्तिपक्षीपाथं प्रतिपादय । 15

Second Half

Examiner:—MM. PANDIT GURUCHARAN TARKADARSANTIRTHA.

प्रथमद्वितीययो-कृत्योचतुर्थयोश्चैकस्योत्तरं कार्यम् ।

1. सत्स्वपि बहुष्वन्वदार्शनिकमतेषु गीतममताखण्डन एव शीघ्रप्रयासे की दितुः ? 15
2. चिद्रूपस्य स्वात्मसिद्धत्वे शीघ्रप्रसम्भता का युक्तिः ? 15
3. अन्वयानुपपत्तेरधिकवशत्वे खण्डनकृतप्रसम्भता का युक्तिः ? 10
4. खण्डनकृता केनोपपत्त्येन शेषासिद्ध्या सर्वसिद्धिरित्युक्तं ? 10
5. अक्षयानुपपत्त्येवैकस्य संकृतानुवादः कर्तव्यः— 25

(a) One of the interesting subjects treated here is Pretyabhāva, literally existence after having departed this life, and this is proved in a very short way. As the self has been proved to be eternal, Gotama says it follows that it will exist after what is called death. Some of the objections made to this tenet are easily disposed of, but nothing is said to establish what is meant by transmigration, that is being born again in another world as either a human or as some other animal being, or even as a plant.

(b) As to Sāmānya, community, or, as we should say, genus, the fourth of Kapāda's categories, it is supposed to be eternal, and a property common to several, and abiding in substance, in quality, and in action. It is distinguished by degrees, as high and low; the highest Sāmānya, or, as we should say, the highest genus is Sattā, mere being, afterwards differentiated by Upādhis, or limitations, and developed into ever so many subordinate species. The Buddhist philosophers naturally deny the existence of such a category and maintain that all our experience has to do with single objects only.

(Group F.)

SEVENTH PAPER.

The figures in the margin indicate full marks.

First Half.

Examiner—MM. PANDIT BIRESWAR TARKATIRTHA.

1. प्रवाहो नादिमानेष न विजात्येकशक्तिमानित्यादि-कारिकायां—कस्य कीदृशः प्रवाहः ? अनादित्वस्य कीदृशोऽर्थः प्रकाशप्रसम्भतः ? न विजात्येकशक्तिमानिति कस्य विशेषणं ? की वा तदर्थः ? तादृश-कारिकार्यस्य कया रीत्या प्रकृतोपयोगित्वं ? 18

2. अनुपलब्धेरभावशङ्कत्वं सदृष्टान्तं परिष्कृत्य तस्य कस्यां विप्रतिपत्तौ कथमुपयोगित्वं ?
आचार्योक्तस्तत्त्वखण्डनप्रकारः प्रदर्शयताम् । 16

अथवा

वैशेषिकमते शब्दस्य कया रीत्याऽनुमानान्तर्गतत्वं ? शब्दस्यानुमानान्तर्गतत्वे वा तन्मते
कामौटसिद्धिः प्रकृतीपयोगिनी ? आचार्यपादैर्वा कया रीत्या तन्मते निराकृतं ? कया युक्त्या
शब्दस्य प्रमाणान्तरत्वं श्रीमदभिप्रेतं ?

3. अप्राप्तेरधिकप्राप्तेरलक्ष्यमपूर्ववद् । 16

यथार्थोऽनुभवो मानमनपेक्षतश्च्यते ॥

व्याख्यायतां कारिकेयं । अनया च कस्य कौटुशी विप्रतिपत्तिः कया रीत्या निराकृता
भवति ? श्रुतेः प्रमात्वमिदं न वा ? सयुक्तिकं तत् प्रदर्शयताम् ।

अथवा

कार्यायोजनधृत्यादेः पदात् प्रत्ययतः श्रुतेः ।

वाक्यात् संख्याविशेषाच्च साध्या विश्वविद्वयः ॥

एतत् कारिकायां नानाविधहेतुपादानस्य किं बीजं ? तादृशहेतुना पञ्चसाध्यमुल्लिख्या-
नुमानप्रणासी प्रदर्शयताम् ।

Second Half.

Examiner—MR. DEBENDRANATH RAY, M.A.

1. (a) द्रव्यं युक्तास्तथा कर्म सामान्यं सविशेषकम् । 12½

समवायस्तथाऽभावः प्रदार्थाः सप्त कीर्तिताः ॥

Explain the principle underlying the order of enumeration of the categories
in the above stanza. Are *ज्ञानि* and *तन्म* included in them ?

Or,

(b) What is precisely meant by *द्रव्य* ? Is it a bundle of sensations, or
something which affects our senses but is stripped of all primary and
secondary qualities, or a sum total of attributes without any substratum ?
How is it known to us ? 12½

2. (a) Is *आत्मा* (atman) a function of the body ? Discuss the question
fully. How is it known to us ? 12½

Or,

(b) How do you prove the Samabaya relation ? Does Viśvanātha differ from Kaṇāda as regards Samavāya ? 12½

3. Translate into Sanskrit :—

25

This does not mean that God is absolutely incomprehensible and entirely beyond our reach, for there is a link between God and man, seeing that God, whatever may be his unfathomable essence, nevertheless manifests Himself. 'Since we rise up to him through the medium of the world,' it must be that He has put something of Himself into the world. Therefore, at least through the point of contact in which He has communicated His essence to creatures, the latter are able to apprehend, to dimly see Him. Here we come upon a fresh problem. We have asked why there is a God ; and now we have to ask why there is a world ? Why could not God have remained in contemplation of Himself ? Moreover, how, without contradiction, can the perfect and the imperfect be bound together in the same essence ? How can a God who is good create a world that is bad ?

(Group F.)

EIGHTH PAPER

First Half

*Examiner :—*MR. PANDIT GURUCHARAN TARKADARSANTIRTHA.

The questions are of equal value.

अधस्तनप्रश्नेषु पद्यानामुत्तरं कार्यम् ।

1. निःश्रेयसं कीदृशं ? तत्र च कथादमते कीदृशः ?
2. आकाशसदभावे किं प्रमाणं कीदृशञ्च तत् ?
3. नित्यसंयोगानङ्गीकारे वैशेषिकसम्भता का युक्तिः ?
4. तर्कप्रसञ्जननिद्रास्वप्नानां कानि लक्षणाणि ?
5. गीतमकथादयीः कुत्र कश्चिन्मतमिदी वर्तते चेत् स कीदृशः ?
6. न्यायीकानां प्रमाण-तर्क-वादावयवानां वैशेषिकसम्भते कश्चिन् पदार्थेऽन्तर्भावः ?

7. अधस्तनसूत्राणां व्याख्या कीदृशी ?—

(क) अविद्या च विद्यालङ्घनम् ।

(ख) प्रत्यक्षविशेषादानीद्वयविशेषः ।

(ग) नीद्वयविशेषादुदसनविशेषः ।

Second Half

Examiner—MR. NALINIMOHAN MUKHOPADHYAYA, SASTRI, M.A.

The figures in the margin indicate full marks.

1. Translate into English any two of the following extracts:—25

(a) यत्तु ससर्गाभावयहे प्रतियोग्यधिकरणीभययोग्यत्वं तन्मिति कैश्चिदुक्तं तन्न समीचीनम् । तथा सति पाषाणं सौरभाभावस्य, गुडे तिक्ताभावस्य, वायौ रूपभाभावस्य, आकाशे स्पर्शाभावस्य शब्दाभावस्य च प्रत्यक्षानुपपत्तेस्तत्तदधिकरणानां तत्तदिन्द्रियायोग्यत्वात् । अतएव त्वक्संयुक्तकालविशेषणतया वायुस्पर्शनाशप्रत्यक्षं पञ्चधरमित्यैः स्वीकृतम् ।

(b) सङ्गिन्नत्वे सत्येकमात्रसमवेतत्वं विशेषत्वम् । एकाग्रितगुणकार्थवारणाय सत्यन्तं, सामान्यवारणाय विशेषत्वम् । घटादीनां दृशकपर्यन्तानां तत्तदवयवभेदात् परस्परं भेदः,—परमाचूनाच्च परस्परं भेदको विशेष एव । स तु स्वत एव व्यावृत्तस्तत्र विशेषान्नरापेक्षा नास्ति । स च नित्यद्रव्येषु तिष्ठति नित्यश्च ।

(c) ननु शरीरतदवयवानां कर्म शरीरतदवयवैर्बहुभिरारभ्यते एव, कथम् अन्यथा शरीरे चलति कारचरणादावपि चलतीति प्रत्ययः, एवमन्यत्राप्यवयविनि इति चेन्न, अवयविकर्मसामग्र्याऽवयवकर्मासामग्री व्याप्तत्वात्तथोपलब्धिः । न तु वैपरीत्यं, नञ्प्रत्ययं चलति सर्वत्रावयविनि चलतीति प्रत्ययः । अन्यथा कारणाकारणसंयोगात् कार्याकार्यसंयोगोऽपि न स्यात् ।

PALI

FIRST PAPER

Examiners :— { MR. SAILENDRANATH MITRA, M.A.
 { MR. GOKUL DAS DE, M.A.

The questions are of equal value.

Six questions are to be attempted, including Nos. 9 and 10.

1. What do you understand by 'Brahmajāla'? With what object in view did Buddha deal with the sixty-two ditṭhis? What evidence is there to show that these were the views of añña tittṭhiyas?

2. Explain fully and criticize the views of the Uccchedavādins and the Diṭṭhadhamma-Nibbāna-vādins or those of Niganṭha-Nātāputta and Makkhali Gosāla.

3. What were Buddha's arguments against the Brahmins' exclusive claims to superiority? Give your own observations on the logic of his arguments and on his conclusions.

4. What is the whole duty of a Buddhist layman? Why is the Singālovāda Suttanta called 'Gihivīnaya'? Is it binding upon the present lay-society?

5. 'Idh'eva bhikkhave samaṇo, idha dutiyo samaṇo, idha tatiyo samaṇo, idha catuttho samaṇo, suññā parappavādā samaṇehi aññehi.'

Explain fully the underlying idea of the above.

6. Explain fully the main object of the Anumāna Sutta of your Majjhima text. How was it known to the ancients? How is *anumāna* differentiated from *paccavekkhanā*?

7. Show that there are, in your texts of the Saṃyutta-Nikāya, materials important for the history of ancient India.

8. Distinguish between the following types of Brāhmaṇa : (a) *Brahmasama*, (b) *Devasama*, (c) *Mariyāda*, (d) *Sambhinnamariyāda*, (e) *Brāhmaṇa-caṇḍāla*; and state the relative position of the brahmins of Buddha's time.

9. Comment in Pali on the following :—

(a) Accharāgaṇasaṅghuṭṭham pi-ṭṭhagāṇasevitaṃ |
Vanan-tam mohanāṃ nāma kathaṃ yātrā bhavissatīti ||
Ujuko nāma so maggo abhaya nāma sā disā |
Ratho akujamo nāma dhammacakkehi saṃyuto ||
Hiri tas-sa apālambo satyassa parivāraṇam |
Dhammāhaṃ sārathīṃ brūmi sammā diṭṭhipurejavan |
Yassa etādisaṃ yānaṃ itthiyā purisassa vā |
Sa ve etena yānena nibbānassova santike-ti ||

(b) Catucakkam navadvāram puṇṇam lobhena saṃyutaṃ |
Pañjakātaṃ mahāvīra kathaṃ yātrā bhavissatīti ||
Chetvā nandiṃ varathāṇca icchālobhaṇca pāpakam |
Samūlaṃ taṇham abbuyha evaṃ yātrā bhavissatīti ||

10. Translate the following into idiomatic English :—

Idha bhikkhave bhikkhu sīlavā hoti pātimokkhasaṃvarasaṃvuto viharati ācāragocarasampanno anumattesu vajesu bhayadassāvī samādāya sikkhatī sikkhāpadesu bahussuto hoti sutadharo sutasannicayo, ye te dhammā ādi-

kalyāṇā majjhekalyāṇā pariyosānakalyāṇā sātthā savyaññā kevala-paripuppaṃ parisuddhaṃ brahmacariyaṃ abhivadanti, tathāriṇ'assa dhammā bahussutā honti dhatā vacasā paricitaṃ manasānupekkhitā dīṭṭhiyā suppaṭividdhā, catunnaṃ jhānaṃ abhicetasikānaṃ dīṭṭhadhammasukha-vihārānaṃ nikāmalābhī hoti akicchalābhī akasiralābhī, āsavānaṃ khayā anāsavaṃ cetovimuttiṃ paññavimuttiṃ dīṭṭheva dhamme sayāṃ abhinīṇā sacchikatvā upasampajja viharati. Ime hi kho bhikkhave cattāro therakaraṇā dhammāti.

SECOND PAPER

Examiners :— { PROF. BENIMADHAB BARUA, M.A., PH.D.
PANDIT VIDHUSEKHAR SASTRI.

The questions are of equal value.

Attempt six questions only, including Questions 7 and 9 which are compulsory.

1. Trace the origin and development of the Vinaya Piṭaka.
2. What is meant by the term Saṅgha in Buddhism? Indicate the lines on which the idea of Saṅgha developed in early Buddhism.
3. Estimate the practical value of the Sekhiya rules. Can you conceive a stage when the Pātimokkha code excluded the Sekhiya rules?
4. What did the Buddha mean by khuddānukhudda sikkhāpadas (minor rules of discipline), and what might be the possible reasons that led the Buddha to authorize the bhikkhus to dispense with the minor rules of conduct, if they so desired?
5. What, according to the Vinaya, were the duties of *upajjhāya* and *ānevasika* towards each other, and what inference may be drawn therefrom about the relation between the trainer and the trained?
6. Form an estimate of the Pātimokkha as a Buddhist code of discipline.
7. (a) yā sā bhikkhave mayā tīhi saraṇāgamanehi upasampadā anujñātā tāhaṃ *ajjalagge* paṭikkhipāmi, anujānāmi bhikkhave *ñatticatutthena* kammaṇā upasampādetuṃ.
(b) manussā *ujjhāyanti khīyanti vipācenti* : aputtakatāya paṭipanno samaṇo Gotamo, vedhabbāya paṭipanno samaṇo Gotamo, kul'upacchedāya paṭipanno samaṇo Gotamo.
(c) yāvakiyaṃ ca me bhikkhave imesu catusu ariyasaccesu evaṃ tiparivaṭṭaṃ dvādasākāraṃ yathābhūtaṃ ānāpāssanaṃ na suvisuddhaṃ ahoṣi n'eva tāvāhaṃ bhikkhave anuttaraṃ sammāsambodhim abhisambudho'ti paccanñāsim.

(i) What is a *ñatticatuttha kamma*? Cite illustrations.

(ii) Comment on the words italicized in the above extracts, adding grammatical notes.

(iii) Express (b) and (c) in English, and mention the circumstances under which the statement in (b) was made.

8. Write explanatory notes on *any four* of the following :—

parivāsa, tassapāpiyyasikā, tiṇavattihāraka, aniggataratanaka, vilekkhā, vaggavūḍḍaka, sīrambhavattū, otiṇṇa, ubbhalasmiṃ kaṭṭhine, and samagga saṅgha.

9. Explain *any three* of the following :—

(a) sahadhammikam vuccamāno attānaṃ avacaniyaṃ karoti.

(b) bhūtagāmapātavyatāya pācitiyaṃ.

(c) agilānena bhikkhunā cātumāsapaccayapavāraṇā sādītabbā aññatra punapavāraṇāya aññatra niccapavāraṇāya.

(d) sammā diṭṭhi, sammā saṅkappo, sammā vācā, sammā kammanto, sammā ājivo, sammā vāyāmo, sammā sati, sammā samādhi.

10. Translate into English, adding short explanatory notes where necessary ;—

(a) pāturahosi Magadhesu pubbe dhammo asuddho samalehi cintito |
apāpur etaṃ amatassa dvāraṃ suṇantu dhammaṃ vimalenānu-
buddhaṃ ||

sele yathā pabbata-muddhani tṭhito yathāpi passe janataṃ samantato |
tathūpamaṃ dhammamayaṃ Sumedha pāsādam āruya
samantacakkhu |

sokāvatīṇṇam janataṃ apetasoko avekkhasu jātijarābbhibhūtaṃ ||

(b) idaṃ kho āvuso cīvaraṃ maṃ uddissa viyyati, āyataṇ ca karoṭha vitthataṇ ca appitaṇ ca suvītaṇ ca supavāyitaṇ ca suvilekhitaṇ ca suvitacchitaṇ ca karoṭha. Appeva nāma mayam pi āyasmantānaṃ kiñcimattaṃ anupadaajjeyyāmāti.

THIRD PAPER

First Half.

Examiner—DR. AMARESWAR THAKUR, M.A., PH.D.

The figures in the margin indicate full marks.

A. Pali and Prakrit Grammar.

Answer Question 3 and either of Questions 1 and 2

1. (a) Give Prakrit equivalents for :—

5

युष्म, यस्मान्, चिह्न, प्रकीर्ण, and गर्भित .

(b) Give Pali equivalents for :—

5

ज्योत्स्ना, चङ् विवसि, अवयवाय, अनाहत, and सूत्र.

(c) Derive the following Pali words :—

4

दिन, दीप्य, निज्जाय, and विरज.

(d) How are Sanskrit *ṛ*, *u*, and *p* represented in Pali and Prakrit? Give examples. 6

2. (a) Comment on the following verbal forms :— 4

करोदि, चिहदि, करोषदि, and जूरुह.

(b) Give the meanings of the following indeclinables and illustrate their uses — 8

अस्मा, अस्मदस्य, किरावता, कीव, षवि, किषी, वसे and अस्मादि.

(c) How are *infinitives* and *gerunds* formed in Pali and Prakrit? Give examples. 4

(d) Express in single Pali words :— 4

पुण्यजनस्य भावो, दुष्टनिष्ठित, मदनस्य ठानं, and पच्छा जाती.

3. (a) Render into Prakrit :— 15

- (i) शृणु, चित्रशालां गता देवी ।
- (ii) अलमार्थपुत्रस्य मनोरथं परिपूर्य ।
- (iii) वयस्य एषा अस्य अविनयस्य अपराद्धा ।
- (iv) अद्य सु ऋषिः नगरं प्रविष्टः ।
- (v) तत् किम् आत्मनः प्रभाविण, ननु नदीवेगस्य ।

(b) Note the peculiarities of declension in Pali and Prakrit. Illustrate your answer by declining a feminine base ending in *ī*. 5

B. Pali Prosody

1. (a) Define *any two* of the following metres :— 10
Sālīnī, Vijjummālā, Indavajirū, and Campakamālā.

(b) Scan, naming the metres, *any two* of the following stanzas :— 10

(i) Kadā mayūrasa sikhāṇḍino vane dijassa sutvā girigabbhare rutaṃ paccuṭṭhahitvā amatassa pattiyaṃ sampintaye, taṃ nu kadā bhavissati.

(ii) Lābhā vata no anappakā ye mayam Bhagavantam addasāma, saraṇam taṃ upema cakkhuma, satthā no hohi tuvaṃ mahāmuni.

(iii) Tato kumāraṃ jalitam iva suvaṇṇam ukkāṃmukhe va sukusalasam-paṭṭhaṃ

daddallamānaṃ siriyā anomavaṇṇaṃ dassesum puttaṃ Asitavhayassa Sakyā.

Second Half

Examiner—PROF. SUNTIKUMAR CHATTERJI, M.A., D.L. TT.

History and Philology of Pali

The questions are of equal value.

Answer three questions only from this half.

1. Discuss the linguistic situation in Northern India at the time of the Buddha, and indicate the position of Pali among Middle Indo-Aryan dialects. Was Pali the actual speech of the Buddha?
2. Discuss the various elements in Pali. How is it that the same Old Indo-Aryan word occurs in two or more different forms in Pali? Give examples.
3. Write a note on the alphabets and orthography of Pali.
4. Briefly indicate the lines of modification of the Old Indo-Aryan vowels into Pali.
5. Write a note on the intrusive consonants in Pali, indicating how in some cases they are survivals of Old Indo-Aryan final consonants. Give examples.
6. Discuss the origin of the inflexions in the declension of the Pali masculine nouns in -a.
7. Write a note on *Parassapada* and *Attanopada* in the Pali verb.
8. Write full philological notes on eight of the following words :—
*Kosiya ; Irubbedā ; Kasiṇūrā ; idha ; uyyutta ; amba ; aḍḍhātiya ;
 tikicchā ; tasiyā ; kāhasi ; kho ; tissā ; Cetiya ; hupeyya ; sukhumāla ;
 Milinda ; veḷu ; dāha ; daḍḍha ; ūla.*

FOURTH PAPER

Examiners :— { PROF. BENIMADHAB BARUA M.A., PH.D.
 { DR. NALINAKSHA DUTTA, M.A., PH.D., D.LITT.

The questions are of equal value.

Answer six questions only.

1. What can we infer from the state of the Pāli canon, and from statements therein, about the original language of Euddha's teachings?
2. Discuss the historical significance of the Buddhist Councils.
3. Point out the characteristic features of the Buddhist Saṅgha as distinguished from other similar organizations in ancient India.
4. Give an estimate of the contributions made by any three of the following personages to Buddhism :—
 Kaccāyana, Sāriputta, Kāśhka, Vasubandhu, Nāgārjuna, and Aśvaghosha.

5. State the fundamental principles of Mahāyāna Buddhism.
6. Bring out the importance of Central Asia as a distributing centre of Buddhist culture.
7. Trace the history of the introduction of Buddhism into Tibet and China.
8. What light do the terms *attavāda*, *puggalavāda*, *ācariyavāda* throw on the origin of the early Buddhist schools and sects?
9. How would you explain the disappearance of Buddhism in India in connexion with the fact that Jainism has survived?
10. Show what historical difficulties are involved in the Theravādin and Sarvāstivādin accounts of the first three Councils.
11. Name the principal schools of early Buddhism, and state briefly their distinguishing doctrines.
12. Distinguish between the pair of terms in *any three* of the following :—
 - (1) Puṭṭhalaśūnyatā and Dharmaśūnyatā.
 - (2) Kiriya-vāda and Akiriya-vāda.
 - (3) Pratīsamukhyā-nirodha and Apratīsamukhyā-nirodha.
 - (4) Saṅkhata and Asaṅkhata.
 - (5) Nirvāṇa and Paṭiccasamuppāda.

(Group C)

FIFTH PAPER

Examiners :— { DR. NALINAKSHA DUTTA, M.A., PH.D., D.LITT.
MR. CHARANDAS CHATTERJEE, M.A.

The figures in the margin indicate full marks.

Answer Questions 1 and 9 and any four of the rest.

1. Translate *any three* of the following passages into English :— 20
 - (a) Tato vijitasamgāmo sayoggabalavāhano
Laṅkaṃ ekātapattakam katvāna pāvisi puram.
Pure bherim carāpetvā samantā yojane jane
saṃnipāṭiya kāresi pūjām Elārārājino.
Taṃ dehapatitattbhāne kūṭāgarona jhāpayi,
cetiyaṃ tattha kāresi parihāram adāsi ca.
Ajjāpi Laṅkāpatino taṃpadesasamipagā
teneva parihārona na vādāpentī tūriyaṃ.
 - (b) Ete te nekakoṭṭi idha manujagaṇe ghātite cintayitvā
kāmaṇaṃ hetu etaṃ manasi ca kayirā sādhu ādīnavan taṃ,
sabbesaṃ ghātaniṃ taṃ manasi ca kayirāniccataṃ sādhu sādhu :
evaṃ dukkhā pamokkhaṃ subhagatiṃ athavā pāpuṇeyyācirenāti.
 - (c) Iti vibhavam anappam sādhupeṇṇā labbitvā
vigatamadapamāda cattakāmappassaṅgā
akariya janakheḍaṃ puñṇakāmmābhiraṃ
vipulavivīdhapuñṇaṃ suppasannā karontīti.

(d) Rāmādhipatirājā ca tesaṃ bhikkhūnaṃ pattakāle Hanūsavatīnagarassa pacchimasmiṃ disābhāge Narasūrena nāma amaccena paribhutte gāmakhetto Pāli-aṭṭhakathāṭṭhikādayo punappunāṃ passitvā upaparikkhitvā sīmāsamūhanasīmāsammutikammāni kārāpesi. Sihaḷadīpe Bhagavatā nahāyitapubbāya Kalyāṇiṃyā nāma nadiyaṃ udakukkhepasīmaṃ katvā tattha Mahāvihāravāsīnaṃ bhikkhūnaṃ santike upaladdh' upasampadabhāvehi bhikkhūhi katattā *Kalyāṇisīmā'ti* samāññaṃ akāsi.

2. Discuss briefly the date of composition and authorship of the Mahāvamsa. 15

3. What light does the Mahāvamsa throw on the cultural relation between India and Ceylon? 15

4. Describe briefly the construction of the Mahāthūpa (Ruvanvāli dāgoba) dealing with the following points :— 15

(a) Site, (b) plan, (c) material, (d) foundation, (e) style, (f) relic-chamber, (g) artists, (h) architecture, and (i) decorations.

5. Enumerate the various Tamil expeditions to Ceylon as recorded in the Mahāvamsa, and give a short account of them suggesting their probable dates. 15

6. Estimate critically the importance of the Sāsanavamsa as a source-book of the history of Buddhism. 15

7. State briefly the troubles which took place in the Orthodox Buddhist Church of Ceylon during the reign of Mahāsena, and show how far the king was responsible for the same. 15

8. Write short notes on *any five* of the following :— 15

(i) Asokārāma, (ii) Ummādhussadeva, (iii) Saddhātissa, (iv) Somadevī, (v) Tanasiva, (vi) Lambakannā, (vii) Jetavanavihāra (of Ceylon), (viii) Coḷarajātha, (ix) Alasanda, and (x) Maricavaṭṭivihāra.

9. Render the following extract into English :— 20

Mahindo tamikanittho so rājaputto tadaccaye
ussāpiya setacchattaṃ Anurādhapure vare
Senasenāninānitadesantarajanākulo
tattha vasaṃ akappesi kicchena dāsa vacchare.
Apetanītimaggaṃsa mudubhūtassa sabbaso
uppādashāgāṃ nādaṃsu tassa jānapadā tadā.
Accantaṃ khīṇavitto so vassamhi dasame vibhū
vuttidānena nāzakki saṃgahetuṃ sakāṃ balaṃ.
Aladdhavuttino sabbe Keraḷā sahita tato
' na vuttidānaṃ no yāva hoti mā tāva bhuñjatu '
iti rājagharadvāre sāhasekaraṃ bhusaṃ
cāpāhatthā nisīdiṃsu saṃnaddhacchurikāvudhū.
Dhanasāraṃ samādāya te vivañciya bhūpati
ummaggato viniggaṃma turito Rohanaṃ agā.
Sīdupabbatagāmaṃ khandhāvāsaṃ nibandhiya
bhātujāyaṃ mahesitte ṭhapetvā so tahiṃ vasi.
Na ciras' eva tassāya matāya sa mahipati
mahesitte nivesesi sakabhūtussa dhītaraṃ.

(Group C)

SIXTH PAPER.

Examiners :— { DR. D. R. BHANDARKAR, M.A. PH.D.
DR. BINAY CHARAN SEN, M.A. PH.D.

The figures in the margin indicate full marks.

Attempt six questions only, including Nos. 1 and 2 which are compulsory.

1. (a) Translate the following into English, adding notes where necessary :— 10

Te sava-pāsapaṇḍesu viyāpaṭṭā dhammādhithānāye chā dhammavaḍḍhiyā hida-sukhāye vā dhamma-yutasā Yonakaṇḍoḇa-Gaṇḍhālānaṃ o vā pi aṃne apalaṃtā bhāṭamayesu baṃbhanibhesu anathesu vudhesu hida-sukhāye dhamma-yutāye apalibḍhāye viyāpaṭṭā te baṃdhanabaddhasā paṭividdhānāye apalibḍhāye mokhāye chā.....viiyāpaṭṭā.

(b) Amplify the idea contained in the following *either* in Pali or Sanskrit :— 10

Pujetayā tu eva parapāsapaṇḍā tena tena prakaraṇena evaṃ karuṃ ātpapāsapaṇḍam cha vaḍḍhayati parapāsapaṇḍasa cha upakaroti tad-aṃnathā karoto ātpapāsapaṇḍam pūjayati parapāsapaṇḍam va garahati savan ātpapāsapaṇḍa-bhātīyā kiṃtī ātpapāsapaṇḍam dipayema iti so cha puna tatha karito ātpapāsapaṇḍam bāḍḍhataraṃ upahanāti.

(c) What Buddhist texts have been prescribed by Asoka in the Bairat inscription ? 9

2. Transcribe the passage quoted in 1 (b) in Asokan Brūhmī. 15

3. Write critical notes on *any four* of the following :— 14

(a) mayā saṃghe upayito ;

(b) paṇisā pi yute āṇapayisati gaṇanāyaṃ hetuto cha vyaṃjanato cha ;

(c) tāya athāya vivādo nīhatī va saṃto ;

(d) pulisā pi cha me ukasā chā gevayā chā majjhimā chā anuviddhiyamti ;

(e) nāsti hi me toso uṣṭāṇamhi atha-saṃtīraṇāya.

4. Is it possible to prove from Asoka's inscriptions that he was a Buddhist in his personal religion ? Give reasons in support of your answer. 14

5. Can you fix the date of Asoka in an approximate manner from the date provided in his own records ? 14

6. On what considerations does Asoka draw a distinction between his own reign and those of his predecessors ? 14

7. Discuss the importance and antiquity of the Sogaura Copper-plate inscription. 14

8. What administrative innovations have been stressed in the inscriptions of Asoka ? How far was his administrative system linked up with his propaganda of Dhamma ? 14

9. Does the Piprawa vase-inscription afford any support to the tradition regarding the extermination of the Śākya clan as recorded in Buddhist literature ? 14

10. The view is sometimes taken that Asoka by his own policy and actions made himself partly responsible for the break-up of his dynasty, that took place shortly after his death. Do you agree? 14

11. 'Gopikā kubhā Daśalathena devānaṃ
piyenā ānaṃtaliyaṃ abhisitenā
Ājivikehi bhadaṃtehi vāṣaṇiṣidiyāye
niṣithā ācamdasūliyaṃ.'

To what time approximately does the gift recorded in the above belong? Give a historical account of the origin and the religious practices of the Ājivika sect. 14

12. What is your estimate of Asoka as a teacher of mankind and a practical idealist? 14

(Group C.)

SEVENTH PAPER

The questions are of equal value.

Not more than three questions to be attempted from each half.

First Half

Examiner :—DR. HEMCHANDRA ROYCHAUDHURI, M.A. PH.D.

1. What light does the Allahabad pillar inscription of Samudragupta throw on (a) the political condition of India, and (b) the topography of the Deccan in the 4th century A.D.?

2. Discuss the importance of the Udayagiri inscriptions of Chandragupta II.

3. Give a brief account of the extent of the Gupta empire from the data supplied by inscriptions.

4. Describe the state of religion in the Gupta period, with special reference to the position of Buddhism.

5. Write critical or explanatory notes on *any three* of the following :—

- (i) chirotsann-āśvamedh-āharttuḥ.
- (ii) vicāḷita-kula-Lakṣmī-stambhanāy-odyatena.
- (iii) sarvveshu deśeshu vidhāya goptṛīn.
- (iv) yad = bhāty = abhiramya-sarid-dvayena chapalormina samupagūḷham.
- (v) śreṇībhūtair = bhavanam = atulaṃ kṛitaṃ dīptaraśmeh.
- (vi) Mālavānāṃ gaṇasthityā yāte śata-chatusṭaye trinavaty-adhike =
'abdhānāṃ pītau sevyā-ghanasvane.

Second Half

Examiner—MR. NANIGOPAL MAJUMDAR, M.A.

1. Give a brief account of the exploits of King Khāravela of Kalinga.
2. Write a short history of the Sātavāhana dynasty, with special reference to the reign of Gautamīputra Sātakarpi.
3. Write a note on the condition of Buddhism during the Scythian period.
4. (a) pañchame ch-edāni vase Nanda-rāja-tivasa-sata-oghāṭitaṁ Tanasuliya-vūṭṭa pañāḍim nagaraṁ pavesayati.
(b) Saka-Yavana-Palhava-nisudanasa dhamopajitakara-viniyoga-karasa kitāparādhe pi satujane apānahisā-ruchisa.....Khakharāta-vasa-niravasasa-karasa.
(i) Transcribe (a) or (b) in contemporary Brāhmī characters.
(ii) Translate extracts (a) and (b) into English, adding notes where necessary.
5. Write short explanatory or critical notes on *any three* of the following :—
(a) Cheta-rāja-varṇsa-vadhana.
(b) vitāsayati Utarāpadha-rājāno.
(c) Govadhanasa Benākataka-svāmi.
(d) raṇo Gotamiputasa Sātakanisa mahādeviya cha jīvasutāya rājamātuya vachanena.
(e) Asaka-Mulaka-Suraṭha-rājasa.
(f) Rāma-Kesav Ājuna-Bhīmasena-tulaparākamasa.

(Group C.)

EIGHTH PAPER

First Half

Examiner:—DR. HEMCHANDRA ROYCHAUDHURI, M.A. PH.D.

The questions are of equal value.

Answer any three of the following questions.

1. Write a critical note on the Buddhist conception of *Jambudvīpa* and its main territorial divisions. How does the Buddhist account in this respect compare with that of the Brāhmaṇas as given in the Purāṇas ?
2. Give a brief account of the following *Janapadas*, with special reference to the important localities associated with Buddha Sākyamuni :—
(a) Kosala, (b) Mallarāṭṭha, (c) Magadha, (d) Vatsa (Vaccha).

3. Discuss the importance of the following rivers and mountains from the point of view of Pāli literature :—

(a) the Anomā, (b) the Rohini, (c) the Hiranyavatī, (d) the Nairanjunā, (e) Gijjhakuto, (f) Himavat.

4. Give a brief account of the topography of Gandhāra and Malwa, with special reference to places famous in the history of Buddhism or of Buddhist kings.

5. Locate the following, and summarize the information that you may have gathered about each from the works or epigraphic records that you have studied :—

- (a) Tambapanni.
- (b) Bharukaccha.
- (c) Malaya and Mahida (Mahendra).
- (d) Kalinga.
- (e) Samatata.
- (f) Kāmarūpa.

Second Half

Examiners— { DR. PRABODHCHANDRA BAGCHI, M.A., D.LITT.,
 { DR. NALINAKSHA DATTA, M.A., PH.D., D.LITT.

The figures in the margin indicate full marks.

1. Write an essay on one of the following subjects :— 50
 - (a) The Importance of Kharosthi inscriptions for the political history of North-Western India.
 - (b) The sources of Ceylonese history.
 - (c) The geographical information yielded by the Pali Nikāyas and the Milindapañha.

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ARABIC.

FIRST PAPER.

Examiners :- { PROF. M. Z. SIDDIQI, M.A., PH.D.
MR. A.H. HARLEY, M.A.

The figures in the margin indicate full marks.

N. B.—Two questions from Group A to be answered and four questions from Group B, of which Question 4 is compulsory.

Group A.

1. 'The culture of South Arabia developed along entirely different lines from that of the North, and its States and towns flourished in response to the stimulus of foreign trade.'

Discuss this remark.

15

2. 'The kingdoms of Hirah, Ghassan, and Kindah not only represent a slow invasion of a religious and superior culture generally from West and East, but also a rudimentary organization on the part of the Arabs of the north and centre of Arabia.'

Explain this statement.

15

3. What were the virtues most highly esteemed by the pre-Islamic Arabs ? Give an account of the tribal ideas regarding Blood Revenge and of the adaptation of this custom by Islam.

15

Group B

4. *Either,*

Draw an outline map of Arabia, indicating in it the relative positions of Makkah and Madinah, and mention the articles conveyed by caravan along the trade route, and the events which ended in the Battle of Badr.

22

Or,

Give an account of the relations between the Prophet and the Jews and Christians in Arabia until the supremacy of Islam.

5. Compare the character and administrative ability of Mu'awiyah and 'Abdu'l-Malik and their respective contributions to the history of their dynasty.

16

6. Discuss the statement that the real founder of the fortunes of the Abbaside dynasty was Abú Ja'far al-Manşûr and not Abu'l-'Abbás al-Saffáh.

16

7. Give a brief sketch of the dismemberment of the Abbaside empire down to the Mongolian invasion, and state whether the initial responsibility for it rests with Hárûn al-Rasbîd.

16

8. Give an account of the part played by the Berbers in the history of the Muslims in Spain.

16

9. Give an account of the victorious expedition of al-Mu'izz-li-Dinillâh and his general Jauhar to Egypt, and the character and activities of the former.

16

SECOND PAPER

Attempt only two questions from Part I and four from Part II.

The questions are of equal value.

PART I

Examiner :—DR. AZIMUDDIN AHMAD, PH.D.

1. Enumerate some of the essential differences between South-Semitic and North-Semitic languages.
2. Who first discovered the unity of Semitic languages, and how ?
3. Where in your opinion was the original home of the Semities ? Give reasons for your answer.
4. Give a brief account of the inflexions of Arabic in the pre-Islamic and classical periods.
5. Write notes on (a) Himyaritic, and (b) Canaanitic.

PART II

*Examiner :—KHAN BAHADUR SHAMS-UL-ULAMA
MD. Hidayet Hossain, F.A.S.B., M.R.A.S.*

Answer any four questions.

1. Give a short account of the prominent Arab poets who flourished in the Umayyad period.
 2. Describe briefly the development of historical literature under the Abbassids.
 3. Write notes on the following :—
Al-Hajjaj, Abu Mikhnaf, Ibrahim al-Mausili, al-'Iqd al-Farid, Ibn-Hanbal, Mu'jamul-Buldan.
 4. Give a brief sketch of the development of Hadith literature during the early Abbasid period.
 5. Write a note on the development of scientific literature in Arabic during Abbasid period.
 6. Describe briefly the contributions of Muslims in Spain to Arabic poetry.
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THIRD PAPER

The questions are of equal value.

Part I.

Examiner :—MAULVI ABDUL HADI

Maximum Marks—60.

Four questions are to be attempted, two of which should be from each group.

Group A.

1. بینوا الا ستثناء باقسامه مع ایراد الا مثله *
2. کم و جهاً للا سم الواقع بعد اسماء المقادیر بینوا مع الا مثله *
3. متی يقدم الفاعل على المفعول و متی يقدم المفعول على الفاعل
و جوباً *

Group B.

1. بینوا التعقید اللفظي و المعنوي مفصلاً مع ایراد الا مثله *
2. ما تعريف الصدق و الكذب و ما الا اختلاف فيه بینوا مع الا مثله *
3. علیکم بتقطیع (scansion) شعرین من اشعار الذیل :—
سلام على اهل القبور الدوارس كأنهم لم یجلسوا فی المجالس
خیر ایام الفتی يوم نفع و اصطناع الخیر ابقى ما صنع
فیالیت الشباب یعود یوماً فا خبره بما فعل المشیب

Part II.

Examiner :—DR. M. W. MIRZA, M. A., PH. D.

Maximum Marks—40.

1. Translate into English *any one* of the following :—

(۱) و البرید ببلاد الهند صنفان - فاما یرید الخیل یسمونه الرّواق
(اولاق) و ره خیل تـکون للسلطان فی کلّ مسافة اربعة امیال - و اما

بريد الرجالة فيكون في مسافة الميل الواحد منه ثلاث رُتَب و يسمونه
 الداوة - و ترتيب ذلك ان يكون في كلّ ثلث ميل قرية معمورة و يكون
 بخارجها ثلاث قباب يقعد فيها الرجال مستعدين للحركة قد شدوا اوساطهم
 و عند كل واحد منهم مقرعة مقدار ذراعين باعلاها جلاجل نحاس - فاذا
 خرج البريد من المدينة اخذ الكتاب باعلى يده و المقرعة ذات الجلاجل
 باليد الاخرى و خرج يشتدّ بتمهي جهده - فاذا سعوا الرجال الذين بالقباب
 صرت الجلاجل تأهبوا له - فاذا وصلهم اخذ احدهم الكتاب من يده و مرّ
 باقصى جهده و هو يحرك المقرعة حتى يصل الى الداوة الاخرى - و لا
 يزالون كذلك حتى يصل الكتاب الى حيث يراد منه *

(h) فلما دخل ابو مسلم عليه قال له اخبرني عن سيفين وجدتهما
 في عسكر عبد الله بن علي - فقال ابو مسلم : هذا احدهما - و كان في يده
 سيف - فاخذه المنصور و وضعه تحت مصلاه ثم شرع في تربيخه و تقرّيعه
 على ذنب ذنب و ابو مسلم يعتذر عن كل واحد بعذر - فعُدّ عليه عدّة
 ذنوب - فقال له ابو مسلم : يا امير المؤمنين مثلي لا يقال له هذا ، و لا تُعدّ
 عليه مثل هذه الذنوب بعد ما فعلت - فاغتاز المنصور و قال : يا ابن اللخطاء
 انت فعلت و الله ! لو كانت مكانك امّة سواد فعلت ما فعلت و هل نلت
 ما نلت الا بنا و بدولتنا ؟ فقال ابو مسلم : دُع هذا فقد اصبح لا اخشى
 غير الله - فضرب المنصور بيده على الاخرى فخرج اولئك النفر فخطبوه
 بالسيف - فصاح استبقني يا امير المؤمنين لعدوك - فقال له المنصور :

وَأَيُّ عَدُوِّ لِيْ أَعْدِيْ مِثْلَكَ ؟ ثُمَّ أَمْرُهُ فَكُفِّ فِيْ بَسَاطٍ - وَدَخَلَ عِيسَى
ابْنُ مَرْسَى فَقَالَ : ابْنُ أَبِي مُسْلَمٍ ؟ يَا أَمِيرَ الْمُؤْمِنِينَ - فَقَالَ الْمُنْصَرَّرُ هُوَ ذَلِكَ
فِي الْبَسَاطِ - فَقَالَ : قَتَلْتَهُ ؟ قَالَ نَعَمْ * قَالَ أَنَا اللَّهُ وَأَنَا لَهُ رَاجِعُونَ - بَعْدَ
بِلَاثَةٍ وَفَعَلَهُ وَآمَانَهُ ؟

(٢٠) وَالْغَدَاءُ فِي تَعْرِيفِ قَوْمٍ مِنَ الْفَلَّاسَةِ فَنَ يَقْصِدُ بِهِ تَحْرِيكَ
النَّفْسِ بِتَنْسِيقِ الصَّوْتِ وَتَأْلِيفِهِ عَلَى طَرِيقَةٍ تَرْتَاكِحُ الْإِنْسَانُ فَتَهْزُلُ لَهُ نَفْسُ
أَرَبَابِ الْمَدَارِكِ الْعَالِيَةِ وَالْمَزْجَةِ الصَّافِيَةِ وَهُوَ الْقُوَّةُ الْمُسَاعِدَةُ لِقُوَّةِ النُّطْقِ فِي
التَّأْثِيرِ عَلَى السَّمْعِ - وَكَانَ الْقَدَمَاءُ يَعْتَبِرُونَ لَهُ لُغَةً عَامَّةً لِسَائِرِ النَفْسِ يَفْهَمُونَ
نَهَا عَلَى اخْتِلَافِ لُغَاتِهِمْ وَالسَّنَتِهِمْ - وَكَانَ لَا بُدَّ لَطَالِبِ الْفَلَسَفَةِ عِنْدَهُمْ مِنْ أَلَا
حَاطَةِ بَغْنٍ الْمَوْسِيقِيِّ مَعَ الرِّيَاضِيَّاتِ، وَقَدْ عَبَّرَ عَنْهُ الْحَكِيمَانِ الْكَبِيرَانِ فَيْثَا غُورَسَ
وَهُرْمَزَ، أَنَّهُ عِلْمُ التَّنْصِيقِ لِكُلِّ شَيْءٍ وَلِذَلِكَ أُطْلِقُوا عَلَيْهِ لَفْظَةً * أَرْمُونِيَا *
وَمَعْنَاهَا النِّظْمُ وَالتَّنْصِيقُ، وَمِنْهُ التَّرْتِيلُ وَكُلُّهُمْ مُجْمَعُونَ عَلَى أَنَّ شَيْءِي
فِي الْعَالَمِ يَعَادِلُ تَأْثِيرَ الْغَدَاءِ فِي تَهْتِئَةِ النَّفْسِ وَتَوَلُّتِ الْقُلُوبِ لِقَبُولِ الْفَضَائِلِ
وَالْكَمَالَاتِ - وَعِنْدَهُمْ أَنَّ الَّذِي لَا يَتَأَثَّرُ مِنْهُ لَا بُدَّ أَنْ يَكُونَ بِهِ نَقْصٌ فِي
الْخَلْقَةِ *

2. Translate into Arabic *any one* of the following:—

(a) It so happened that a certain man dug up a grave and took off the winding sheet and cut off the hand of the dead. The learned men of the Birni assembled before Amir Ali to pronounce judgment on this questionable procedure. Some of the learned men held that the exhumation of the corpse committed no offence in cutting off the hand, but others held a contrary opinion and advised the Amir that the act was unlawful. The learned men then consulted the most celebrated legal text-books, but they did not find in their books any conclusive authority to guide their judgment. One of the learned men said: 'I

remember that there was a book which contained a judgment on this matter in the mosque of al-Azhar'. The Amir overheard this which was said in council, and asked about the whereabouts of the book and its name. The learned man repeated the name of the book to the Amir, who was heard to say, 'very good' and seen to stretch out his hand in the direction of the mosque of al-Azhar and take the book into his hand and place it before the assembled learned men.

(b) Months passed by and Tehmina gave birth to a son, upon whom she bestowed the name of Suhrab. As the child grew up, his resemblance to his father became more and more pronounced; of exceptional height and girth, he was far in advance of his play-fellows in daring and courage. Upon reaching manhood, he became restless to discover the whereabouts of his father, having learnt from his mother's lips the pathetic little story. He resolved to spare no effort in his determination to bring the two together once more. Selecting a horse, one of the breed of Rakhsh, he gathered an army, and announced his intention of proceeding to Iran to fight against King Kai-kaus, discover his father, and make his mother Queen. Tehmina, though sadly loth to part with her son, felt her heart warm towards the brave, impetuous boy, and could not but give him every encouragement. In order to aid him, she procured for him the services of Zhanda Razm, a man who knew Rustam by sight.

FOURTH PAPER

First Half.

Examiner :—Mr. A. F. M. ABDUL KADIR, M. A.

The questions are of equal value.

Answer any three questions.

1. Translate into English (a) or (b) and (c) :—

زُهر النجوم نثرن ببيض رماح	(n) ترعاك بين عشيّة وصباح
سمحاء مثل عواطر الأرواح	ويغيب نور البدر قبلة عاشق
بالتبر لا عبّة و بالمصباح	وتليه بانية الممالك والدنا
ما كان للأجرام غير مبّاح	متسا بقات في تبنيك الذم
و غدتك بالالهام و الإفصاح	ربّك آلاف السنين بنورها
خلعت عليك معالم الأفراح	و دُعيت قبرا لا دُعيت فطالما

(b) وطنى لو صبرت فى البعد عنه مثلت ايه بحسى و لمسى
 وطنى لو عدته اقسى الاعادى ما تعدت على يقينى و حدسى
 وطنى لو دعيت ان افتديه ما تمونت غير تخليد رمسى
 وطنى لو سكت فى البعث عنه شمتة ضاحك بختات قدس
 وطنى مفزعى انا منه بعض كيف انساه و هو اصرى و اسى
 كيف ارثيه و هو رغم التنايى ملهمى ' منعشى ' غفور لياسى

(c) ذكرى العجائب من قديم بائد خصتك بالتخليد للشرح
 قل للزمان و أهله كم خيرة مثلت فى الأ حجار و الأ لواح

بينوا لنا بالعريّة بعض الحوادث و الرجال العصريّة التي لها علاقة . 2.
 بشعر أبي شادى *

3. Bring out some peculiarities and beauties of modern Arabic poetry, and compare them with those of the poetry of the pre-Islamic and Islamic periods.

4. Sketch briefly the conduct of Jabalah, the various stages of his life, and his ultimate end discussed in the Fatata Ghassan.

5. Translate into English :—

و جلس جبلة فى السراى على و سادة من الحرير الموشى و جلست
 ابنته الى جانبه و ثعلبة الى الجانب الآخر و اجلسوا الشاب على مرتفع
 ليراه الجميع ثم اخذت الجوارى ينشدن أناشيد التهنئة وجاء بعض رجال
 جبلة يحمل الدرع ثم وقفت هند و أمارات السرور ظاهرة على وجهها فمشت
 الى مقعد حماد فوقف لها و ركبتاه تر تعشان لعظم تأثره لأن نه علم أنها جاءت
 لتلبسه الدرع فززع عن رأسه الكوفية و العقال فبان فلباسه وجهه جيداً
 فازدادت هياماً به ولكنها استغربت فيه أمراً و ذلك أن حماداً لما نزع
 كوفية ظهر شعر رأسه طويلاً غصاً حتى غطى ظهره *

Second Half.

Examiner :—MAULVI A. AZIZ.

The figures in the margin indicate full marks.

1. Write an essay on *any one* of the following subjects :— 50

(a) Shuubiyyah Movement; its origin, objects, and grounds and criticism.

(b) The contribution of Spanish-Arab authors to the various branches of Arabic literature.

(c) القرآن ، اعجاز و تأثيره على الادب العربي *

(d) Islamic Traditions and their place in the history of Islam.

(Group A)

FIFTH PAPER.

The questions are of equal value.

First Half.

Examiner :—MR. A. F. M. ABDUL KADIR, M. A.

Answer three questions only, one of which must be question 1 or 2.

1. Translate into English, adding explanatory notes where necessary :—

و يرم من الشعرى ينوب لعبه	افاعيه فى رمضائه تتلمل
نصبت له وجهى ولا كن دونه	و لا ستر الا الا تحمى المرعب
ضاف اذا هبت له الريح طيرت	لبائد عن اعطائه ما ترجل
بعيد بمس الدهن و الفلى عهده	له عبس عاف عن الغسل محول
فاما ترانى كابنة الرمل ضاحيا	على رقة احفى و لا اتنعل
فاني لمولى الصبر اجتباب بزه	على مثل قلب السمع و العزم افعل
طريد جنبايات تياسرن لحمه	عقيرته لا يها حم اول
و الف هموم لا تزال تعوده	عيادا كحوى الربع بل هى اتقل
اذا وردت اصدرتها ثم انها	تثرب فتاتي من تحيت و من عل

2. (a) Give in Arabic the gist of the passage quoted in Question I.

(b) Explain in English :—

سمت تكاليف الحياة ر من يعيش ثمانين حولاً لا اباك يسام
رايت المذايا خبط عشواء من تصب تمته ر من تخطي يعمر فيهم
ر من لا يصانع في امور كثيرة يضرس بانياب و يوطأ بمنسم
ر من يك ذا فضل فيبخل بفضله على قومه يستغن عنه ر يزعم
ر من لا يند عن حوضه بسلاحه يهدم ر من لا يظلم الناس يظلم

3. Write what you know about the life of الشنفرى

4. 'The *Lāmiyya* of al-Shanfarā is the most perfect drama I can call to mind.' Discuss.

5. Give an account of the *Mu'allāqa* of Zuhair, pointing out its most salient features.

Second Half.

Examiner :—PROF. MUHAMMAD SHAFI, M. A, (CANTAB)

Answer three questions only, of which one must be Question 1 or 2 or 3.

1. Explain in English :—

(١) ان البخيل ملوم حيث كان ولكن
الجواد على علانه هـرم
هو الجواد الذي يعطيك نائله
عفوا ر يظلم احياناً فينظم
ر ان اتاه خليل يوم مسئلة
يقول لا غائب مالي ر لا حرم
القائد الخيل منكوباً درابها
منها الشنون ر منها الزاهق الزهم

(b) تنازعها المهاشبه و ذر الذكور و شاكت فيه الأطباء
فاما ما فريق العقد منها فمن ادماء مرتعبا الخلاء
واما المقلتان فمن مهابة و للدر الملاحة و الصفاء

2. Explain in Arabic :—

لمن الديار بقنة الحجر قوين من حجج و من شهر
لعب الزمان بها و غيرها بعدى سوا فى المور و القطر
دع ذا وعد القول فى هرم خير البداة و سيد الحضر
ولنعم حشو الدرع أنت اذا دعيت نزال و ليج فى الذعر
و لانت تقرى ما خلقت و بعض القوم يحلق ثم لا يفرى
و الستردون الفاحشات و ما يلقالك دون الخير من ستر
لو كنت من شئ سوى بشر كنت المنور ليلة البدر

3. Translate into English and give the context :—

يا حارلا ارمين منكم بداهية لم يلقها سارقة قبلى و لا ملك
اردد يسار اولا تعنف عليه و لا تمعلك بعرضك ان الغادر المعك
و لا تكونن كقوام علمتهم يلورن ما عندهم حتى اذا نهكوا
طالبت نفوسهم عن حق خصمهم مخافة الشر فارتدوا لما تركوا
تعلمن ها لعمر الله لا قسما فا قدر بذرعك و انظر اين تنسلك
لئن حلت بجور من بنى اسد فى دين عمرو و حالت بيننا فدك
ليانينك منى منطق قدع باق كما دنس القبطية الردك

4. Discuss the views of various Arab critics about Zuhari's poetry.

5. Comment on the following, and show with what justification have the last two verses been criticized by the علماء الشعر —

(a) فان الحق مقطعة ثلاث يمين او نفاذ او جلاء

(b) يخرجن من شربات ما رواها طحل

على الجنوع يخفن الغم والغرقا

(c) ثم استمروا و قالوا ان مشربكم

ماء بشريقي سلمى فيد اوركك

(Group A.)

SIXTH PAPER

Examiners— { KHAN BAHADUR SHAMS-UL-ULAMA
MD. HIDAYET HOSSAIN, F.A. S. B., M. R. A. S.
Dr. MUAZZAM HUSSAIN, M. A., D. PHIL.

The questions are of equal value.

Answer any six questions.

1. What is the theme of the *Lâmiyyat-ul-'Ajam* of at-Tughrá'i? What has made him famous in the history of Arabic literature?

Or,

Compare and contrast the *Lâmiyyat-ul-'Ajam* with the poem in contra-distinction to which it is so called.

2. Write full explanatory and grammatical notes on :—

راد الضحى ، للجللى ، الانيق الذلل ، مثنى اللجم ، انضاء حب ، الا
عين النجل ، and لديغ الغوائى -

3. Expound in simple and clear Arabic any three of the following :—

(a) مجدى اخيراً و مجدى اولاً شرع

والشمس راد الضحى كالشمس فى الطفل

(b) اعلل النفس بالآمال ارقبها

ما اضيق العيش لولا فسحة الامل

(c) غاض الوفاء و فاض الغدر و انفرجت
مسافته الخلف بين القول و العمل
(d) و ان علاني من دوني فلا عجب
لي اسرة بانحطاط الشمس من زحل

4. Discuss :—

“ كان مسلم بن الرليد متفئنا متصرفا في شعرة وهو فيما زعموا اول
من قال الشعر المعروف بالبديع “

5. Sketch in Arabic the distinctive features of the poetry of Muslim b. Walid.

6. Translate into English, adding explanatory notes where necessary :—

خيال من الذائي الهوى المبتعد	سرى فسرى عنه عظيم التجلد
دعا رطرا حتى اذا ما اجابه	اطاف بمطرون الجفون مسهد
فبات ينجى النجم حتى كانما	يخالس عينيه الكرى ليل ارمد
اذا امكن السلوان حبة قلبه	ثنى شوقه سهمان ريشا بائمد
يطالعه وجه العزاء و يرتقى	به صبوة في شار غير مسدد
اذا الف النور الجفون تقسمت	كراه تباريح الهوى المتجدد
ملاملك اني لم اعنف ملامة	تراءت بنصح من ضميرك فاقصدي

7. Explain in Arabic with reference to the context *any one* of the following passages :—

(1) مذبحوا العد ومع الصوارم والقنا
من كل نهد لا يزال كانه
حتى تذلة البلاد لحر بهم
كانوا الملوكة بنى الملوكة ورائة
اعطاهم ذل المقادة قيصر
جمهور خيل خلفها جمهور
يوم الهياج عملس ممطور
وابيخ من نار العد و سعيير
والملك فيهم لا يزال يدور
وجي اليهم خرجه سابور

(b)

و سادة سيرة ما فيهم
كلهم جليلد ما فيهم حريد
بان السفاه عدهم فرايهم سديد
يسقرون صفو راح لذيقها موجود
كانت يعهد نوح و هم لها جنود
حتى اذا ايدوا اورتها ثمود
شمسية شمول شيطانها مرید
من عمل النصارى لم تخذها الميهر

8. Re-write in your own Arabic, bringing out the sense as clearly as possible :—

Esther (A)

انخت بها و الشمس تنعق بالضحي
و ما صاحبي الا المدامة و الحجل
اذا شئت حياني الثرى بنباته
وطالعتني في روضه العصم العقل
تراخين دوني تم او جس خيفة
فانلعن كحلا مسترابا لها الكحل
و غبراء لا يسقي على الخمس ركبها
قطعت و ديق الشمس يغلي به السجل
تجازرتها و الآل مستنقع بها
كنشر القباطي انتضي مياها الغسل
و ملتهجب بالذاي قلب دليها
يبيت بها عن بيته الحجاب و الصعل

لقيت الدجى فيها رلاً لصل قلعة
ومحتنك المساء مقتضب طفل

Or (B)

وإذا الدجى التبت فارل طالع
في وجهها من جيبها المتروقد
يغدر وقد اسرى السرى و كأنما
غاده بالدلجات ليل المرفد
ركب الضحى حتى اذا اعتنق الدجا
وافترها عن مغرب متروقد
خط الركاب الى جناب محمد
من جنم ليل كالغمامة اريد
تخدى العرضة قد تقسم طرفها
وضع الطريق و خوف مس المحصد
نهض ابن منصور فادرك غاية
فعدت مآثرها بكل مسود
ملك اذا الغايات مدت شاره
سبق الجياد وفات كل مقلد

(Group A.)

SEVENTH PAPER

Examiners— { MAULVI ABU USMAN KHALIL, M. A., B. L.
 SIR A. SUHRAWARDY KT., M. A., PH. D., D. LITT,
 BAR-AT-LAW, M. L. A.

The questions are of equal value.

Answer any six questions.

1. Write a short biography of al-Jahiz, and determine his position among the literary men of the 3rd century A.H.

2. Give a critical estimate of the البيان والتبيين as a popular treatise on rhetoric.

Define البيان, and discuss its importance according to al-Jahiz.

3. Translate any three of the following into English, adding explanatory notes where necessary :—

(a) سلى الجائع الغرثان يا ام منذر

اذا ما اتانى بين نارى و مبجزى
 هل ابسط رجعى انه اول القرى
 و ابذل معروفى له ، دون منكبرى

(b) اضحك ضيفى قبل انزال رحله

و يخصب عندى و المحل جديب
 و ما الخصب للاضياف ان يكثر القرى
 و لكنما و جه الكريم خصيب

(c) له داع بمكة مشعمل و آخر فوق دارته ينادى

الى روح من الشيزى عليها لباب البريلبك بالشهاد

(d) و الصمت احسن بالفتى ما لم يكن عى يشينه

و القول ذر خطا اذا ما لم يكن لب يعينه

4. Describe المراثى, and show the difference between المراثيه and المدحة according to Ibn Qudama.

5. Explain and criticize, according to Ibn Qudama, any one of the following :—

(a) اذا كنت فى دار تخاف به الردى

فصمم كتصميم الغداني سالم
سخطلبا للور نفسا بموته
فمات كريما عائفيا للملائم
نقى ثياب الذكر من دنس الخذا
يناجى ضميرا مستندف العزائم
اذا هم اقربى ما به هم ماضيها
على الهول طلاعا ثنايا العظائم
و لما رأى السلطان لا ينفعونه
قضى بين ايديهم بابيض صارم

(b) لما رقت عليه بالجوع ضحى

و قد تعرضت الحجاب والخدم
حييته بسلام و هو مرتفق
و ضجة القوم عذ الباب تزرحم
فى كفه خيزران ريعا عبق
من كفه اروع فى عرينه سم
يغضى حياء و يغضى من مهابته
فما يكالم الا حين يبتسم
كلتا يديه ربيع غير ذى خاف
هذى خروج و هذى عارض هم

6. Give a critical estimate of the كتاب الشعر و الشعراء as a book of literary criticism.

7. Translate into English *any two* of the following :—

(a) ولا نظرت الى المتقدم منهم بعين الجلالة لتقدمه و لا المتأخر منهم بعين الاحتقار لتأخره بل نظرت بعين العدل الى الفريقين و اعطيت كلا حقه و وفرت عليه حظه فانى رأيت من علمائنا من يستجيد الشعر السخيف لتقدم قائله و يضعه موضع متخيره و يرذل الشعر الرصين و لا عيب له الا انه قيل فى زمانه و رأى قائله و لم يقصر الله الشعر و العلم و البلاغة على زمن دون زمن و لا خص به قوما دون قوم بل جعل ذلك مشتركا مقسوما بين عباده و جعل كل قديم منهم حديثا فى عصره و كل شريف خارجيا فى اوله *

(b) و اذكر اسباب الجودة و احوالها و اعداد اجئاسها ليكون ما يوجد من الشعر الذى اجتمعت فيه الاوصاف المحمودة كلها و خلا من الخلال المذمومة باسرها يسمى شعرا فى غاية الجودة و ما يوجد بضد هذه الحال يسمى شعرا فى غاية الرذلة و ما يجتمع فيه من الحالين اسباب ينزل به اسما بحسب قربه من الجيد او من الردى او وقوعه فى الوسط الذى يقال لما كان فيه صالح او متوسط او لا جيد و لا ردى فان سبيل الا وسط فى كل ما له ذلك ان تحدد سلب الطرفين كما يقال مثلا فى الفاتر الذى هو وسط بين الكارر البارد و لا حار و لا بارد *

(c) قال بعض جهابذة الالفاظ و نقاد المعانى : المعانى القائمة فى صدور العباد المتصورة فى اذهانهم و المتخلجة فى نفوسهم و المتصلة بخواطرهم و الحادثة عن فكرهم مستورة خفية و بعيدة و حشية و محجوبة مكنونة و مرجدة فى معنى معدومة لا يعرف الا نسان ضمير صاحبه و لا حاجة اخيه

وخليطه ولا معنى شريكة والمعارن له على اموره وعلى ما لا يبلغه من حاجات نفسه الا بغيره - وانما تحيا تلك المعانى فى ذكرهم لها واخبرهم عنها واستعما لهم - وهذه الخصال هى التى تقربها من الفهم وتجلبها للعقل وتجعل الخفى منها ظاهرا والغائب شاهدا والبعيد قريبا *

8. Explain any six of the following :—

(a) الاقراء *

(b) التتميم *

(c) النكافؤ *

(d) بديته مثل تفكيره متى رمته فهو مستجمع

(e) وعى الفعال كعى المقال وفى الصمت عى كعى الكلم

(f) احداثه ان الحديث من القرى وتعلم نفسى انه سرف بهجع

(g) سقام الحرس ليس له شفاء وداء الجهل ليس له طبيب

(h) لله نعمتنا تبارك ربنا رب الا نام ورب من يتأبد

(Group A.)

EIGHTH PAPER

The questions are of equal value.

Part I.

Examiner—MAULANA FAZLUL RAHAMAN BAQI.

Answer any three questions.

1. Translate into English, adding explanatory notes where necessary :—

فما زال به قطوب الضلوب و حروب الكروب و شر شر الحسود وانتياب
الذوب السرد حتى صفرت الراحة و قومت الساحة و غار المنبع ربنا المربع و اقوى

المجمع واقض المضجع واستحالت الحال واعرل العيال وخلت السرايط و
 رحم الغابط و اودى الناطق والصامت ورثى لنا الكاسد والشامت و آل بنا
 الدهر الموقع والفقر المدقع الى ان احتذيذا الروى و غتذيذا الشجا واستبطنا
 الجوى وطرينا الا حشاء على الطرمى و اكتعلنا السهاد واسترطنا الرهاد و
 استوطنا القتاد وتذا سينا الا قتاد واستبطنا الحين المجتاح واستبطنا اليوم
 المتاح *

2. Render the following in simple Arabic :—

كلفت مذهبى طعنى التمايم ونيطت بى العمائم بان اغشى معان
 الادب وانضى اليه ركاب الطلب لا علق منه بما يكون لى زينة بين الانام
 ومزنة عند الام وكنت لفرط اللهم باقتباسه والطمع فى تقمص لباسه
 اباحث كل من جل وقل واستسقى الربل والطل بعسى ولعل فلما حللت
 حلوان وقد بلوت الا خوان وسبرت الا وزان وخبرت ما شان وزان الفيت بها
 ابا زيد السروجى يتقلب فى قوالب الا نتساب ويخط فى اساليب الا
 كتساب *

3. Write explanatory notes on the following :—

خير العشاء سوافره - جراب كفواد ام موسى - هلم جرا - نبضت لى منه
 فريضة - انجز حر ما وعد - و الذى استخرجنى من قبيلة لقد امسيت
 اخا عيله *

4. Compare the following verses of البحترى and الحريرى, and point out their respective merits :—

كانما تبسم عن لؤلؤ
 منضد ار برد ار اقحاح
 (البحترى)

يفترعن لؤلؤ رطب ر عن برد
وعن اقاح ر عن طلع ر عن حبيب
(الحريري)

5. Write a critical note on the style of the *maqamat* of al-Hariri.

Part II.

Examiner—MR. A. H. HARLEY, M.A.

1. (a) Translate into English :—

فانشد نصيب قوله *

وكم دون ذلك العارض البارق الذي
له اشتقتُ من وجه أسيل مدامعة
تمشى به افناء بكر ومذحج
وافناء عمرو وهو خصب مرابعة
فكل مسيل من تهامة طيب
دميت الربي تسقى النجاد درافعه
أعنى على برق اريك وميضة
تضي دجنات الظلام لوامعه
اذا اكتعلت عينا محب بضوئه
تجافى به حتى الصباح مضاجعه
هنيئاً لام البحتري الررابه
وان انهج الحبل الذي النأى قطعه

(b) Parse هنيئاً. Discuss the substitution of تسيل for أسيل

(c) Write an account of نصيب. To what class or classes did the musicians belong ?

2. (a) Translate into English :—

فكرته ثلاثا ثم اتيته فسهل من اذنى فلما استقرّ بى المجلس قال يا غلام
قل لقيمتى هاتى وديعتى ففتح بابا بين بيتين و اذا بجارية فقال لى هذه
بغيتك - قلت نعم فداك ابى وامى قال اجلس ثم قال يا غلام قل لقيمتى
هاتى عليه نفقتى فأتى بطيبة فنثرت بين يديه فاذا فيها مائة دينار ليس فيها
غيرها - فردّت فى الطيبة ثم قال عتيده طيبى فأتى بها فقال ملحقة فراسى
فأتى بها فصيرّ ما فى الطيبة وما فى العتيده فى حواشى الملحقة ثم قال
شانك بهواك و اسدعن بهذا عليه *

(b) Write notes on the following :—

شأ نك ; فداك ابى وامى

(c) What was the value and origin of the دينار ? What coinage was in use in Arabia ?

3. (a) Translate into English :—

قال بعثت اليك لبيت خطر ببالى لم أدر من قاله فقال
فدعوا بالصبرح يوماً فجاءت قينة فى يمينها ابريق
قلت هذا يقوله عدى بن زيد فى قصيدة له قال فانشدنيها فانشدته *

فدعوا بالصبرح يوماً فجاءت قينة فى يمينها ابريق
قدّمته على عقار كعين الديك صفى لافها الراروق
مزة قبل مزجها فاذا ما مزجت لذ طعما من يذوق
وطفت فوقها فواقع كالدّر صغار يثيرها التصفيق
ثم كان المزاج ماء سماء غير ما آجن ولا مطرورق

(b) What emendation has been proposed for فواقع ? Would the scansion permit it ?

(c) Is there any distinction in meaning between خمر and شراب ?

4. (a) Translate into English :—

فاتى بالابل اصحاب الكنيف فكلبها لهم وحملهم عليها حتى اذا دنوا
من عشيرتهم اقبل يقسمها بينهم و اخذ مثل نصيب احد هم فقالوا لا ر
اللات والعزى لا نرضى حتى تجعل المرأة نصيبا فمن شاء اخذها ... فافكر
طويلا ثم اجابهم الى ان يرد عليهم الا راحلة يعمل عليها المرأة حتى يلتحق باهله
فابوا ذلك عليه حتى انتدب رجل منهم فجعل له راحلة من نصيبه فقال
عروة فى ذلك قصيدته التى اولها *

الا ان اصحاب الكنيف و جد تهم
كما الناس لما امرعوا و تمولوا
وانى لمد فروع الى ولاؤهم
بما وان اذ نمشى ر اذ نتلمل
وانى و اياهم كذى الام ارهنت
له ماء عينيها تفدى و تحمل
فباتت تحدد المرفقين كليهما
توحروح مما نالها و تولول
تخير من امرين ليسا بغبطة
هر الشكل الا انها قد تجمل

(b) Parse : كليهما and اياهم

(c) Give in proper order the Arabic names for the various divisions existing within the tribe (حى)

5. Write an account of al-Farazdaq. Was poetic composition for him an inspiration or technique and skill ? Give two meanings for the root of the verb نشد and show what connection there is between them.

6. Discuss carefully the following statement of Jurji Zaidan :—

فاهمية هذا الكتاب متروكة على ما حواه من تلك التراجم و الاخبار
ويكاد يكون منفردا بها - ولولا لضاع كثير من اخبار الجاهلية و صدر
الاسلام و ايام بنى اميه - و هو ثقة لتدقيقه و تمحيصه لانه لا يكتفى بالاسناد
الى البراة بل هو ينتقدهم و يبين اوجه الخطأ او المناقضة بين رواياتهم ثم يرجع
الى دأيه *

(Group B)

FIFTH PAPER

Examiners— SIR A. SUHRAWARDY, Kt., M.A., Ph.D., D.Litt.,
BAR-AT-LAW, M.L.A.

The questions are of equal value.

Only six questions are to be attempted.

1 ر من الحكايات المدخلة للمؤرخين ما ينقلونه كافة فى سبب
نكبة الرشيد للبرامكة من قصة العباسة اخته مع جعفر بن يحيى بن خالد مولا.

Give the context, translate the above passage into English, state the
in question, and discuss it fully according to Ibn Khaldun.

2. الكذب متطرق للخبر بطبيعته، وله اسباب تقتضيه .

State the causes of historical fallacies to which reference is made in the
above passage, and illustrate some of them according to Ibn Khaldun.

3. Describe briefly Ibn Khaldun's system of Geography, and discuss its
relation to the principles laid down by him with regard to historical criticism.

4. Differentiate between نبوة and كهانة، and explain them according to
Ibn Khaldun.

5. فهذه ثمان كلمات حكيمية سياسية ارتبط بعضها ببعض و ارتدت
اعجازها على صدورها و اتصلت في دائرة لا يتعمن طرفها فخر بعثوره عليها و

عظم من فوائدها وانست اذا تأملت كلا منا في فصل الدول و الملك و اعطيته
حقه من التصفح و التفهم عثرت في اثناؤه على تفسير هذه الكلمات و تفصيل
اجمالها مستوفى بيذا بأربع بيا و اوضح دليل و بهان اطلعنا الله عليه من
غير تعليم ارسطو و لا افادة مريدان *

Translate the above passage into English, with reference to the context, and discuss the originality of Ibn Khaldun about the principles laid down by him in his prolegomena.

6. Discuss, according to Ibn Khaldun, the influence of climate on character.

7. Explain, according to Ibn Khaldun :—

(a) ان اهل البدو اقرب الى الخير من اهل الحضرة *

(b) ان اهل البدو اقرب الى الشجاعة من اهل الحضرة *

(Group B.)

SIXTH PAPER

Examiner—PROF. M. Z. SIDDIQI, M.A., PH.D.

The questions are of equal value.

Answer ANY SIX questions only.

1. و اما الحقوق الواجبة للرعية على الملك فمنها حماية البيضة و
سد الثغور و تحصين الاطراف و امن السرايل و قمع الرعار * فهذه حقوق تلزم
السلطان تجرى مجرى الفروض الواجبة و بهذه الا مرور يجب طاعته على
رعيته *

Translate the above passage into English, and discuss the duties of the rulers towards the ruled according to al-Fakhri.

2. و فتیان صدق لست مطلع بعضهم
على سر بعض غير انى جماعها

لكل امرء شعب من القلب فارغ
 و موضع نجوى لا يرام اطلعها
 يظلمون شتى في البلاد و سرهم
 الى صخرة علي الرجال انصداعها

Explain the above passage in English, discuss the importance of حفظ السر for a ruler, and illustrate it according to al-Fakhri.

3. Give the meaning of the word وزير the necessary qualifications and duties of a وزير, and name the first and also the greatest وزير of the Abbasides, and discuss the causes of their fall.

4. Write historical notes on *any two* of the following, and discuss fully the part played by them in the history of Islam :—

الخوارج - القرامطة - الباطنيين *

فانصرف المغيرة الى سعد فاخبره بما جرى بينهما ر قال لسعد :
 استعد للحرب فامر الناس بالتهيؤ و الاستعداد فبات الفريقان يكتبون
 الكتاب و يعبرون الجند و اصبحوا قد صفوا الصفوف *

Give the context, translate the above passage into English, and explain fully the causes which brought the Muslims into conflict with the Persians, and of the success of the former.

6. Explain with reference to the context, and discuss the effect of the advice of Amr on the history of Islam :—

قال عمرو اني قد اعددت بحيلتي امرا اخرته الى هذا اليوم فان قبلوه
 اختلفوا و ان رده تفرقوا قال معاوية ما هو قال عمرو تدعوهم الى كتاب الله
 حكما بينك و بينهم فانك بالغ به حاجتك *

7. Give the names of the organizer and leader of the Abbaside propaganda, and describe its principal scheme according to al-Dinawari.

8. Write historical notes on *any two* of the following, and discuss fully the part played by them in the history of Islam :—

ابو اسحق المختار - المهلب بن ابي صفرة - نصر بن سيار *

(Group B.)

SEVENTH PAPER

Examiner—KHAN BAHADUR SHAMS-UL-ULAMA MD. HIDAYET HOSSAIN,
M.R.A.S., F.A.S.B.

The questions are of the equal value.

Answer Question 6, and ANY FOUR of the rest.

1. Who was the first Muslim to land on the coast of Spain with a view to conquer the country? Give a brief sketch of his life, and discuss the causes of his success.

2. Write short notes on the following :—

* بنو الا حمر - فحص السراق - جامع قرطبه قصر الزهراء

3. Give in your own Arabic, a short account of the reign of 'Abdul-Rahmān al-Nāsir.

4. Enumerate the various qualities of Hishām b. al-Hakam as a ruler, following closely the account given by the author of *Nafhūl-Tib*,

5. Give, according to Ibnu'l-Khatib, a short account of the various improvements brought about in Cordova during the period of Muslim supremacy.

6. ومن مفاخر المنصور في بعض غزواته انه مر بين جبلين عظيمين في طريق عرض بربر بوسط بلاد الافرنج فلما جاوز ذلك المعمل وهو اخذ في التحريف والتخريب والغارات والسبا يمينا وشمالا لم يجسر احد من الافرنج على لقائه حتى اقفرت البلاد مسافة ايام ثم عاد فوجد الافرنج قد استجاشوا من رائه وضبطوا ذلك المدخل الضيق الذي بين جبلين *

Translate the above passage into English, and discuss the contribution of Mansur to the political and cultural history of Muslim Spain.

(Group B.)

EIGHTH PAPER

*Examiner—PROF. A. F. M. ABDUL KADIR, M.A.**The questions are of equal value.**Answer ANY SIX questions.*

1. Who are the Fatimides? What are their claims to the Islamic Caliphate? Discuss fully.

2. Give an account of al-Hākim's conquests in the west, and discuss his colonial policy.

3. Describe the conquest of Egypt by the Fatimides, and discuss its influence on the political and cultural progress of the country.

4. Discuss, in your own Arabic, the genealogy of the Fatimides, and give your own opinion on the subject.

5. Translate into English:—

و فيها عظم امر ابى الحسن جوهر عند المعز باذيقية و على محله و صار
فى رتبة الوزارة فسيره المعز فى ثغر جيش كيف منهم زبرى بن منذ
الصنهاجى و غيره و امره بالمسير الى اقصى المغرب فصار الى تاهرت فحضر
عنده يعلى بن محمد الزناتى فاكرمه و احسن اليه ثم خالف على جوهر
فقبض عليه و ثار اصحابه فقاتلهم جوهر فانهزموا و استعقبهم جوهر الى مدينة
افكان فدخلها بالسيف و نهبها و نهب قصر يعلى و اخذ ولده و كان صبيا
و امر بهدم افكان و احرقها بالنار *

6. Describe the career of al-Muiz Iddinillah in Egypt and give a full estimate of his character, pointing out the progress made by Egypt during his reign.

7. Give a detailed account of the expeditions of the Fatimides against the Carmathians.

(Group E)

FIFTH PAPER

Examiners— { PROF. M. Z. SIDDIQI. M.A., PH.D.
DR. ZAHIRUDDIN AHMAD-AL-JAMAI, M.A., D.LIT.

The questions are of equal value.

Answer ANY SIX questions.

1. (a) Explain the following passage fully :—

.. انت لا تغفل عن ذاتك و ما من جزء من اجزاء بدنك الا و تنساه
احيانا ، فلو كذت انت هذه الجملة او جزا من اجزائها ما كن يستمر شعورك
بذاتك مع نسيانها ، فانت وراء هذه الجملة .. *

(b) Describe the main problem discussed in the above passage, and give some other reasons in support of the author.

2. .. لا يصح ان يكون شيان هما و اجبا الوجود .. *

Discuss fully according to your author.

3. Discuss how far the Ishraqiyya school succeeded in reconciling Religion and Philosophy.

4. Give a sketch of the life of al-Shaykh-al-Maqtúl, and discuss how far his end was a martyrdom.

5. What are the main principles of Ishraqiyya Philosophy? Was it 'an offshoot of ancient Neo-Platonism'? If not, why not?

6. مفيض حركات الفلك نفسه فتحريكها لجرم الفلك تحريك

اختياري و تحرك جرم الفلك بتحريكها تحرك قسري *

Explain the above passage and discuss it according to the author of the Hayakil-al-Núr.

7. Prove the immortality of soul according to al-Shaykh-al-Maqtúl.

8. Explain any seven of the following terms :—

١ البهر - العرض - النفس - الجهات العقلية - الهيئة - لازم الحقيقة -

٢ الروح - الحيواني - الحواس الباطنة - الحواس الظاهرة *

(Group E.)

SIXTH PAPER

Examiners— { VISCOUNT SANTA CLARA.
DR. A. HUQ.

The questions are of equal value.

Answer ANY SIX questions.

1. State the main features of Al-Falsafat-ul-Mashshaiya.
2. Define philosophy, and explain it according to Ibn Sina.
3. Explain Ibn Sina's theory of movement.
4. What is Ibn Sina's theory with regard to infinite quantity?
5. What is the meaning and what are the powers of the human soul in Ibn Sina's philosophy?
6. What position do the Divine things hold in the system of Ibn Sina?
7. Give a sketch of the principles of Metaphysics in Ibn Sina's philosophy.
8. What is Ibn Sina's theory of good and of evil?

(Group E)

SEVENTH PAPER

Examiners— { MAULV ABU USMAN KHALID, M.A., B.L.
DR. ZAHIRUDDIN AHMAD-AL-JAMAI, M.A., D.LITT.

The questions are of equal value.

Answer ANY SIX questions.

1. Describe the several schools of Philosophy that constituted علم الكلام. What contributions are made by each of them?
2. Explain the circumstances which led to the diversity of faith among the Muslims and caused the birth of علم الكلام.
3. Explain in English any two of the following:—

(1) الانبياء افضل من الملائكة عندنا خلافا للمعتزلة و القاضي منا و
الفلاسفة لنا قوله تعالى ان الله اصطفى آدم ونوحا و سواهم اجريته على
العموم او حملناه على عالمي ذلك الزمان كما في قوله تعالى و اني فضلنكم

على العالمين فالمقصود حاصل و لان البشر يعرفون الله و يحبوننه مع كثرة الصوارف من السهو و الغضب و الموانع الداخلة و الخارجة و ليس للملائكة من ذلك فتكون طاعة البشر اشد فيكون افضل لقوله صلى الله عليه و سلم افضل العبادات احملها اى اشقها *

(1) اتفق الكل على انه تعالى قادر خلافا لجمهور الفلاسفة لنا انه ثبت افتقار العالم الى موثر فذلك الموثر اما ان يقال صدر الاثر عنه مع امتناع ان لا يصدر او صدر مع جواز ان لا يصدر و الاول باطل لان تأثيره فى وجود العالم ان لم يتوقف على شرط لازم من قدمه قدم العالم و قد ابطالناه و ان توقف على شرط فذلك الشرط ان كان قديما عاد الا لزما فان كان محدثا كان الكلام فى حدوثه كالسلام فى الاول و لزمت التسلسل اما معا و هو محال اولا الى اول فيلزم منه حوادث لا اول لها و هو محال و لما بطل هذا القسم ثبت الثانى و لا نغنى بالقادر الا ذلك *

(2) للنزاع فى ان الايمان فى اصل اللغة عبارة عن التصديق و فى الشرع عبارة عن تصديق الرسول بكل ما علم بالضرورة مجيئه به خلافا للمعتزلة فانهم جعلوه اسما للطاعات و للسعادات فانهم قالوا انه اسم للتصديق بالقلب و الاقرار باللسان و العمل بالاركان لنا ان هذه الطاعات لو كانت جزءا من مسمى الايمان شرعا لكان تقيد الايمان بالطاعة تكريرا و بالمعصية نقضا لكنه باطل بقوله تعالى الذين امنوا و لم يلبسوا ايمانهم بظلم و بقوله تعالى الذين امنوا و عملوا الصالحات *

4. Reproduce briefly in your own words the controversy between الاشاعرة and المعتزلة.

5. Write short biographical sketches of any three of the following :--

الغظام - ابو الهزيل الهمداني - ابو منصور الماتريدي فضل الحدادى -
ابو على محمد الجبائى - شاه ولي الله الدهلوى *

6. Explain and illustrate with examples the essential points of difference between—

(a) حقيقة الشيء وعوارض الشيء *

(b) ماهية الشيء وهوية الشيء *

7 Compare and contrast the evidences put forward by المتكلمين and the القرآن الكريم regarding the existence of God.

8. Criticize the views held by المتكلمين regarding حدوث العالم

9. Define المعجزة and discuss how far they are proof of prophethood.

(GROUP E.)

EIGHTH PAPER

Examiners— { VISCOUNT SANTA CLARA.
SIR A. SUHRAWARDY, KT. M.A., PH.D., D.LITT.,
BAR-AT-LAW., M.L.A.

The questions are of equal value.

Answer ANY SIX questions.

1. Discuss the main features of Moslem philosophy as a whole.
2. Who were the principal Moslem Peripatetic philosophers? What differences do you see between the Moslem Peripatetic philosophy and the Ishraqiya philosophy?
3. Give the main historical data on the Pure Brethren (أخوان الصفا)
4. What were the principal philosophical theories of Averroes?
5. Give the historical sources of Moslem philosophy.
6. Who were the Mutazilites? What are the main points on which the Mutazilites differed from the orthodox thinkers?
7. Discuss Al-Ashari's position in Ilmu'l-Kalam.
8. Discuss the meaning and value of Ilmu'l-Kalam according to Al-Ghazali.

PERSIAN

FIRST PAPER

Examiners— { PROF. M. Z. SIDDIQI, M.A., PH.D.
 SIR Z. R. ZAHID SUHRAWARDY, KT., M.A., B.L.,
 BAR-AT-LAW.

The questions in each group are of equal value.

*Answer only TWO questions from Group A, THREE from
 Group B, and TWO from Group C.*

GROUP A

1. Name two of the greatest kings of the Achæmenian dynasty, and discuss their chief achievements.
2. Give a brief sketch of the conquest of Persia by the Greeks and of the termination of their domination in Persia.
3. Give a brief sketch of the career of Malik Shah, and discuss the political and cultural history of Persia.

GROUP B

4. Describe the Muslim invasion of Persia, and discuss its causes.
5. Describe and discuss fully the part played by the Persians in the overthrow of the Umayyads.
6. Give a brief sketch of the career of Malik Shah, and discuss the part played by Nizamu'l-Mulk in his government.
7. Describe briefly the state of Persia before the modern Revolution.

GROUP C

8. Comment briefly on the rise of Sher Shah and the fall of his dynasty.
9. State the career of Aurangzib, and discuss fully the causes of his success against his brothers.
10. Describe the invasion of India by Ahmad Shah Abdali, and discuss its influence on the future history of India.

SECOND PAPER

Examiners— { MAULVI MD. ISHAQUE, M.A., B.Sc.,
 DR. WAJAHAT HUSSAIN ANDALIB SHADANI, M.A., M.O.L.,
 H.P., PH.D. (Lond.)

The questions are of equal value.

Answer ANY SIX of the following questions.

1. How do you account for the dearth of the pre-Islamic literature of Persia? Explain the causes fully.

2. Compare Daqiqi with Firdausi. What does Firdausi himself say of his predecessor? Do you agree with him or differ from him, and why?
3. What do you know of the literature of the early Seljuq period? Indicate the part played by Nidhamu'l Mulk in its development.
4. How do you account for the fact that 'Umar Khayyām is better appreciated in Europe than by his own countrymen? Determine his place among Persian poets.
5. Describe briefly the development of early Sufistic literature in Persian.
6. Compare S'adi and Hafiz as poets and ghazal writers.
7. Give a brief account of at least four important Persian prose works produced before the Mongol Invasion of Persia.
8. Sketch briefly the life of ناسخ و تالیف, and give an estimate of his poetry.
9. Of the poet-laureates who flourished at the courts of Akbar, Jahangir, and Shah Jahan, whom do you consider the best, and why?

THIRD PAPER

The figures in the margin indicate full marks.

First Part

Examiner—KHAN BAHADUR AGA MD. KAZIM SHIRAZI.

1. Define any five of the following:— 5

صدر - زحاف - عروض - متدارک - متکاس - قید - خبن - ترنیل *

2. 5
Either,
Explain and illustrate:—

لف - إبطاء - قصر - إقواء -

Or,

Give the معانی of زحافات.

3. (a) Scan the following couplets, and name the metre in each case:— 8

ریگ آموی ر در شتیهای ار
پای ما را پرنیان آید همی
من عمر خرویشتن بصیری گذاشتم
عمر دگر ببابد تا صبر بر دهد

- (b) Would it be right to say that the second ω of the word پرنیان in (a) is to be dropped altogether in scansion? Give reasons. 2

4. Distinguish between تشبیه and استعاره, giving at least *two* examples of each. 8

Or,

Give the various elements and kinds of تشبیه with examples.

5. Name and explain the rhetorical figures in the following verses:—7

مریم بکر معانی را منم روح القدس
نو عروس فضل را صاحب مدم نعم الفتی
هر که در مزرع دل تخم وفا سبز نه کرد
زرد رویی کشد از حاصل خود گاه درو

6. What do you understand by— 10

پهلوی - دری - زند - پازند - ارستا ؟

7. Give the etymology of *any five* of the following:— 10

اسپ - شصت - شتر - دبیر - دیوان - پرر - شغال - ادرك - فرشته - گیسو - گریبان *

8. *Either,* 10

Comment on تمیز^م - ملاب^م - ماجر - ولی (meaning 'but') - سرچوکی.

Or,

Discuss the influence of Arabic on Persian.

Second Part

Examiner—Dr. A. S. Siddiqi, M.A., Ph.D.

1. Translate into English both A and B:— 20

A

این عقده را باید گفت خواه اساتید دانشمند بسمع رضا بشنوند خواه گردانندگان شعار
نشرتمدن اروپا ابرو گره کنند که فساد ادبیات تازه، ما را انکار نمودن از انکار
حسن و عیاش است و سعی در تکمیل آن ما دامیکه این کوره راه را ترک نگفته کاری عبث
و بیعاصل میباشد و باین حال اصلاحش موقوف برین خواهد بود که از ریشه تغییر کرده
زبان دل و مظهر معرفت قوم بشود *

B

باید دانست که لغت نیز در تحت ناموس نشو و ارتقاء متواضع است و قرن بقرن بلکه سال بسال و روز بروز طریق کمالی می پیماید و سیر تکاملی دارد و کلمات و حروف و صورت ترکیب در هر زبانی مبداء تکوینی دارد و احوالی را دارا ست که با یکدیگر مختلف است - لغات عالم بواسطه اختلاطی که مابین ملل موجود میشود و عوامل دیگر از قبیل وجود عادات و آداب و شرایع در هر عصر تغییر می یابد و ممکن است در اثر تغییراتی که در زبان راه پیدا میکند لهجه تغییر کند یا لغات مستعده پیدا شود یا لغاتی از بین برود - بالاخره لغات اهل عالم یک سیر طبیعی دارد و انقلاباتی بر آنها عارض میشود و عیناً حکم ملت و نثرادی دارد که در بدو امر سرزمینی را محل خود قرار میدهند رفته رفته زیاد میشوند و آداب مخصوصه اختیار می نمایند و دره ترقی و انحطاطی دارند و هر لحظه بر وسعت سلطنت و حکومت و نفوذ خویش میافزایند و احوال مختلفه پیدا میکنند و کم یا بیش در عالم زندگانی ادامه داده بالاخره بالمره از بین میروند و اثری از آنها باقی نمی ماند یا اینکه در صفت تاریخ عالم اثری بیادگار باقی میگذارند *

2. Translate into Persian *any one* of:—

20

A

We assembled at the close of day, and began our march just as the Muezzins called the evening prayer. Proceeding at once to the village of Ashtarek, we passed Kishmiazin, the seat of the Armenian Patriarch, on our left. It was scarcely dawn of day when we reached the bridge of Ashtarek, still obscured by the deepest shade, owing to the very high and rocky banks of the river, forming, as it were, two abrupt walls on either side. The village itself, situated on the brink of these banks, was just sufficiently lighted up to be distinguished from the rocks among which it was built; whilst the ruins of a large structure, of heavy architecture, rose conspicuous on the darkest side, and gave a character of solemnity and grandeur to the whole scenery.

B

The human mind possesses various capabilities, and these capabilities remain dormant in most of us; there ought to be some space and time for every one of us to bring them to their full growth. Moreover, the mind has admittedly an occult side to it, which has never till now come to its full and permanent manifestation in any individual. It discloses itself occasionally in advanced souls. Visions, dreams, journeys of the soul are some of its aspects that have now come within the ken of the Western world through recent researches, though they have been known to Muslims since the birth of Islam.

FOURTH PAPER

First Half

Examiner—KHAN BAHADUR AGA MD. KAZIM SHIRAZI.

Answer ANY FOUR of the following questions.

1. 'Much insight into the Persian manners and characters can be gained by reading Haji Baba.'

How far is the above statement correct? Discuss.

2. Reproduce, in your own Persian, the adventures of Darvish Safar as narrated by him to his friends!

3. Write a short note on the origin of Drama in Persian.

4. Elucidate the following passages with reference to their context:—

(a) بازئی سر تو بیاورم که در همه داستانها گفته شود *

(b) این آقا مردان از کهنه تو لکهای حرامزاده است که نقشش در ما بین زمین و آسمان هم نمبر سد *

(c) تا داروغه سرش توی حساب نباشد نمیتوان این کار را از پیش برد *

(d) هچو یک نا درست کهنه ته لکی است که هر روش را میخوانی میزند *

(e) حریف بدی را دچار آمده بودم که لبلاچ شاگردش نمیشد *

(f) حاجی! راستی تو دو روز راه زیر پوست رفتی بغداد هرگز دست از سرت بر نمیدارم *

(g) بعم غرور پای ستوران خود در وقت و بیوقت و جوی و چره و در دره و تپها بی باک همنی گذشتیم *

(h) تا اثبات کنم که من آن نیم تسمه از کرده ام بر آورده اند *

5. What idea do you form of the court of justice as depicted in ؟ و کلاى مرفعه

6. Give a short account of the life of the poet بهار, and describe him as a national poet.

Second Half

Examiner—DR. A. S. SIDDIQI, M.A., PH.D.

Write an essay in Persian on one of the following subjects:—

(a) The national character of the Persians as reflected in their poetry.

- (b) The Isma'ili movement.
 (c) The decline of Persian scholarship in India: Its causes and the possibilities of its revival.
 (d) The cultural achievements of the Safawī dynasty.

(Group A—Literature)

FIFTH PAPER

The figures in the margin indicate full marks.

First Part

Examiner—MAULVI ABU USMAN KHALID.

1. تا اقتدا بعفاف شیراز کرده‌ایم 15
 گشته است مقتدای در عالم کلام ما

In the above statement نظیری claims to have imitated Hafiz. Discuss fully how far his poetry supports his claim.

Or,

Define غزل, trace its origin and give the salient features of the Ghazals of سعدی

2. Translate any two of the following into English, adding explanatory notes where necessary: 29

A

درد و غمت که همچو هما استغوان خورند
 بر من مبارک اند گرم صغز جان خورند
 مست آئیم بصلح اگر نگرانی ببری
 زان می که در صحبت هم دوستان خورند
 یشکرانچنان نغورد کس ز دست دوست
 کزادگان ز دست مبارز سنان خورند
 چانی و صد کرشمه مزگان چه میکنند
 این تیرها تمام اگر بر نشان خورند

چشم هزار تشنه بگزر در کمین تست
 قرضم که خام میوه این بوستان خورند
 آزادگان بجای رسیدند و ما همسان
 زان رهروان که گرد پس کاروان خورند
 هر جا گلیست بهر نظیری طرب گپیست
 کی بلبلان مست غم آشیان خورند

B

دامن دولت جاوید و گریبان امید
 حیث باشد که بگیرند و دگر بگذارند
 نه من از دست نگارین تو معروحم و بس
 که بشمشیر غمت کشته چو من بسیارند
 عجب از چشم تو دارم که شبانگاه تا روز
 خواب میگیرد و خلقی ز غمت بیدارند
 بر العجب و اقعاً باشد و مشکل کاری
 که نه پوشیده توان داشت نه گفتن یاراند
 یعلم الله که خیالی ز تنم بیش نماند
 بلکه آن نیز خیالی است که می پندارند
 تا به بستان ضمیرت گل معنی بشگفت
 بلبلان از تو فرموده چو بوتیمار اند
 سعدی اندازه ندارد که چه شیرین سغنی
 باغ طبع همه مرغیان شکر گفتار اند

ای دیدنت آسائش و خندیدنت آفت
 گوی از همه خوبان بربودی باطافت
 ای صورت زیبای خطای بنکوتی
 ای قطره باران بهاری بنظافت
 ای سرو خرامان گذری از در رحمت
 وی ماه درخششان نظری از سررافت

ای عقل نگفتم که تو در عشق ننگی
 در دولت خاقلان نه توان کرد خلافت
 گویند برر تا برود صعبت از دل
 ترسم هو سم بیش کند بعد مسافت
 باقد تو زیبا نبود سر و به نسبت
 با روی تو نیکو نبود مه باصافت
 صد سفره دشمن بنهد طالب مقصود
 باشد که یکی دوست بیاید بضیافت

8. Explain in Persian any six of the following :--

18

- (۱) سعدیا دی رفت و فردا همپنان موجود نیست
 در میان این و آن فرصت شمار امروز را
- (ب) اگر بهر چه تو گوی مغالفت نکنم
 که بی تو عیش میسر نمی شود مارا
- (ج) سعدیا گر بکند سیل فنا خانۀ عمر
 دل قوی دار که بنیاد بقا معکم است
- (د) پیش رویت دگران صورت بر دیوار اند
 نه چنین صورت و معنی که تو داری دارند
- (ه) حال سعدی تو چه دانی که ترا دردی نیست
 دردمندان خبر از صورت حالش دارند
- (و) دیدیم ز سر تا قدمش حسن و شمائل
 لیک از همه خویشتن وفا بیش آمد
- (ز) گرسنه دیده تر از مفلس کعبان بودم
 خواجه گشتم که ازان حسن زکاتم دادند
- (ح) مجلس چو بر شکست تماشا بما رسید
 در بزم چو نماند کسی جا بما رسید
- (ط) مجلس عشق از فروغ من نظیری روشن است
 موسی از بهر چراغم آتش طور آورد
- (ی) این کعبه را بنای بباطل نهاده اند
 بس معنی جمال درین گل نهاده اند

4. Write notes on any *five* of the following :-

9

- آتش طور - نففور - موسیقار - ثریا - قتل عمدا
چشمه حیوان and گلزار ابراهیم - وادی ایمن

Second Part

Examiner—DR. WAJAHAT HUSSAIN ANDALIB SHADANI, M.A.. M.O.L.,
H.P., Ph.D. (LOND.)

1. Discuss the various criterions set down to ascertain the genuineness of Khayyam's quatrains. 10

2. Trace the origin and describe briefly the development of رباعی in Persian down to the Mongol invasion of Persia. 10

Or,

Give Khayyam's views on the „مسئله جبر و قدر“.

3. Translate into English *any three* and comment on them :— 10

- (a) این کوزه چو من عاشق زاری بود ست
در بند سر زلف نگاری بود ست
وین دسته که در گردن او می بینی
دستی است که در گردن یاری بود ست
- (b) دی کوزه گری بدیدم اندر بازار
بر پاره گلی لکد همی زد بسیار
وان گل بزبان حال با او میگفت
من همچو تو بوده ام مرا نیکو دار
- (c) ابر آمد و باز بر سبزه گریست
بی باده گلرنگ نمی باید زریست
این سبزه که امروز تماشا که ما ست
تا سبزه خاک ما تماشا که کیست
- (d) پیش از من و تو لیل و نهار بود ست
گر دنده فلک نیز بکای بود ست
ز نهار قدم بغضاک آهسته نهی
کان مردمی چشم نگاری بود ست

(Group A—Literature)

SIXTH PAPER

The questions are of equal value.

QASIDA—A.

*Examiner—MAULVI SHAH KALIMUR RAHAMAN, M.A.**Attempt ANY THREE questions.*

1. (a) Explain in simple Persian *any one* of the following extracts, adding notes where necessary :—

A

هر صبح سر ز گلشن سودا بر آورم
 روز صور آه بر فلک آوا بر آورم
 چون طلیسان چرخ مطرا شود بصبح
 من رخ به آب دیده مطرا بر آورم
 چون کوه بر لعاب کوزن افتد بصبح
 هوی کوزن وار بصعرا بر آورم
 از اشک خون پیاده و از دم کنم سوار
 غوغا بهفت قلعه مینا بر آورم
 خود بی نیازم از حشر اشک و فوج آه
 کان آتشم که یک تنه غوغا بر آورم
 اسفندیار این دژ روئین منم بشرط
 هر هفته هفتخوانش به تنها بر آورم

B

خورشید کسری تاج بین ایوان تو پرداخته
 یک اسبه بر گوی فلک میدان تو پرداخته
 عیسی کده خرگاه او وز دلو یوسف جاه او
 در حوت یونس گاه او یرسان تو پرداخته
 این علت جان بین همی علت زداى عالمی
 برسام دی را هر دمی درمان تو پرداخته

براز هوا بر گلی چکن ماند برنگ دایه کان
 در کام رومی بهگی پستان نو پرداخته
 برده بهارم منظره بهره برن از ششدره
 نزل جهان را از بزه صد خوان نو پرداخته
 هان شری دولت بفرش کامثال نیک آمد برش
 چو بارید مرغ از برش دستان نو پرداخته

(b) Write short notes on :—

هفت خوان اسفندیار - دژ روئین - باربد *

(c) Define and explain the figure of speech in the 6th bait (A) or that in the 2nd bait (B) of Question 1.

2. Explain and annotate *any four* of the following :—

- (i) مرا بر لوح خاموشی الف با تا نوشت اول
 که درد سرزبانست و ز خاموشیت درمانش
- (ii) چون بیزن داری اندر چه متعجب افراسیاب آسا
 که رستم در کمین ست و نهنگی زبر خفتانش
- (iii) دل تنگ تر ز دیده سوزن شدست و من
 بختی غم بدیده سوزن بر آورم
- (iv) آبی علویند مرا خصم چون خلیل
 بانگ ابا نسبت ابا بر آورم
- (v) چون موسیم شجر دهد آتش چه حاجت ست
 کاتش زتیه وادی ایمن بر آورم

3. Give a critical estimate of Khāqānī as a Qaṣīda-writer.

Or,

Khāqānī is 'one of the most brilliant figures of the Persian Parnassus'. Discuss.

4. (a) Give in your own Persian the main ideas contained in the following extract :—

همه کس عاشق دنیا و ما فارغ ز غم ایرا
 غم معشوق سگ دل هست بر عشاق سگ جانش

بدین اقبال یک هفته که بفراید مشو غره
 که خود ماه در هفته است انگه افزونیش نقصانش
 بهالاکى بید انجیر منگر در مه نیشان
 بدان افتادگی بنگر که بینی ماه آبانش
 ز چرخ اقبال بی ادبار خواهی ار ندارد هم
 که اقبال مه نو هست با ادبار سرطانش
 بقای نیست هیچ اقبال را چند آرزو مستی
 خود اینک لا بقا مقلوب اقبال است بر خوانش
 بقرس از تیر باران ضعیفان در کمین شب
 نه هرگز ضعف نالن تر قوی تر زخم پیکانش

(b) Explain the poetical artifice in the 5th bait of Question 4.

5. (a) What form of speech is the word اینی ؟ Give some other instances of it.

(b) What is the force of suffix „ه“ in the expressions یک هفته - دو هفته ؟

(c) Mention the seven طبقات of Heaven (بهشت) and Hell (دوزخ) in Persian.

MATHNAWI—B

Examiner—SIR A. SUHRAWARDY, Kt., M.A., PH.D., D.LITT.,
 BAR-AT-LAW, M.L.A.

Attempt any three questions.

1. (a) Translate into English any one of the following extracts, adding explanatory notes where necessary :—

A

گرداب نشین موج اول	آن مرکز هفت جدول
والا گهر محیط لولای	چای قدم بساط افلاک
نورش به فلک چراغ و قندیل	قدرش به زمانه ماه و اکلیل
نقش کف پاش نشر و روح	حرف لبش از دو کون مشروح
آتش زن دودمان انکار	مشعل نه پیش گاه اقرار
با تیغ و زبان نور قاطع	با شرع و کتاب نور ساطع
با تیغ زبان نه تیغش	دمساز بعکم بیدریغش

B

از نور	بشب	داد	صد شمع بدست روشنائی
از فیض فشانده	گل برایام		خورشید ز چراغ و شاه از بام
آن گل نه	از و بروزگاران		در یوزگه کند بهاران
من برده به	نقش سادگی راه		دل همچو سفیدگه سحرگاه
سر رشته	فکر را بصد بند		با رشته صبح داد پیوند
نالان من و مرغ	در چمن زار		از من قلم و از مرغ منقار
طبعم ز بهار	گل فشان تر		کلم ز سیم گل فشان تر

(b) Explain the terms :—

هفت جدول - موج اول - محیط لولای

(c) To what practice does the poet refer in the 2nd bait (B) of Question 1 ?

2. Give in your own words the substance of Fayḡlī's dissertation on Love (عشق).

Or,

Give the purport of Nal's letter to Daman, and Daman's reply to the

3. Explain fully *any four* of the following extracts :—

- | | |
|-------------------------------|----------------------------|
| (i) یک نقطه ز لوح اوست عالم | یک نقطه ز صلب اوست آدم |
| آدم سر و تن در آب گل داشت | کو حکم بملک جان و دل داشت |
| (ii) او شیر و جهان بطاعتش زیر | چون ز اهل خطا پرستش شیر |
| جوید دلش آفتاب دیراست | خود خانه آفتاب شیر است |
| (iii) زین هفت رباط و چار منزل | بندم به حمازه پنج محمل |
| زین پس که برآرم از عماری | این پرده نشین به پرده داری |
| آن چار عروس هفت خرگاه | آوردم شان به نیمه راه |
| (iv) این باده مجر به بزم هرکس | کین نشه بند باشد و بس |
| این رشته به سحر هفت رشتند | وین سبزه بغاک هند کشتند |
| (v) شاهی و جوانی آند و مشتیت | کاتش فکس شیر هشتیت |
| خوش آنکه باین فراخدستی | هرشیار بود درین دو مستی |

4. What place would you assign to Fayḍī's Nal-Daman in romantic literature?

Or,

،، و العقی منثورئی ست که درین سیصد سال مثل آن بعد از میر خسر و شاید در هند

کسی ننگه باشد * Discuss.

5. Give a brief account of Fayḍī's life, noticing the main features of his poetry.

Or,

Describe briefly the characters of Nal and Daman as portrayed by Fayḍī.

(Group A—Literature)

SEVENTH PAPER

Examiners— { PROF. M. Z. SIDDIQI, M.A., PH.D.
SIR Z. R. ZAHID SUHRAWARDY, Kt., M.A., B.L.,
BAR-AT-LAW.

The questions are of equal value.

Answer ANY SIX questions.

،،چرخ خطیب منبر نبوت، و عذلیب حدیقه فقرت، اعنی برگزیده ایزد 1.
ذوالجود و الهم، عیسی بن مریم، بصدر صفه برتری و تفرق در آمده، گهر و جود
کرامتش، از آب رنگ کرامت و رسالت زیب گرانهای و رتبه کامل عیاری یامت، روزی
در صحرای عبور نمود، و ملاقات جوانی دران والی روی داد که بهراندین محافظت
کله اغنام اقدام داشت *

Explain the above passage, and give the rest of the story in your own Persian.

2. Translate into English :—

،، روزی از ایام فصل ربیع رهایت که گلهای جمعیت خاطر، از نسیم فیض شمیم
مهب شوق در بستان بیغمی دسته دسته شگفته، و شاهد عذار جمال شادکامی در آغوش
دل نشاط منزل بهزار گونه مهر و محبت خفته بود، یکی از معانی احباب موالیت - آداب،
برسم ضیافت وارد گردید، که بساط آئین آن معقل آرام هنگامه، بزبور جواهر گرانهای

خوبی و سرور، منظم و نمثال خواهد اسباب پیرایه شادمانی و نشاط در آئینه حصول جلوه کرد؛ مرتسم گردید، و فوجی از نسغه بندان عطارخانه معبت که اجزای معاین الفت و صعبت را در ظرف اتحاد، مغروح ^{مستحضر} ساحته از تربیت کیفیت مفرح ماده العیوة تعداد حکایات دلپذیر قلع ماده پیوست اندوه از دماغ احوال همدیگر می نمودند، و از مداومت نوش داری شیرین زبانی تقویت دلهای یکدیگر میفرمودند *

3. Describe the importance of patience and forbearance, and illustrate it according to the author of the Shamsa wa Qahqaha.

4. Describe the discussion between the سنی and the مبتدع, and comment upon it.

5. Explain fully :—

نظم را طبقات است و شعرا درجات، بعضی معلوم است و بعضی مبهم و بعضی مغفل و بعضی مغلل، و نوعیست که آنرا ذو الشرفین خوانند، و جنسی است که آنرا ذو الطرفین گویند، و شعریست که آنرا متشابه الاجزاء و متناسب الاجزاء خوانند و در تحت هریکی کانی است و جولان هریک را میدانی، و معرفت هر یک را معیاری و میزانی - نه هر که سخن تواند گفت، دری تواند سفت، و بیشتر از آن ابکار آنست که در خدر انکار نهفته است. و نادانسته و نا خوانده و نا گفته است، اگر شما را ازین مرصع تاجی باید و ازین طمع، فانا خطیب الخطباء و صاحب صنعة الصنعاء و در علم بغل و شمع نیست، و اناه فضل بی تقطرو ترشح نی *

6. Give in your own Persian, the substance of the Maqama on الجهاد

7. Mention the اوصاف بلع, as described in your text.

8. Translate into English —

.. شامی در کمال شوکت و استقلال بچهرت و شهادت عظیم بر فراز تخت نشسته و تاجی مکلل بلالی شاهوار بر سر نهاده جمعی کثیر از خدم حشم در اطراف تخت و بارگاه صف بصف ایستاده، فوجی از مقربین بساط دولت چون فقرات نظم و نثر در صفحه سفینه آن معقلی فردوس شمائل جا بجا نشسته، مطربان خروش العان و مغنیان ناهید نشان، هریک چنک ضرب بر تار طنبور ساز و نواای زده عذلیب آهنگ را در شاخسار نفحه و ترانه مترنم و سرود سرا داشتند - چون بوصول قرب بساط عزت مشرف گردیدم سر بسجده خدمت فرود آورده زمین نیاز بوسیدم - شهریار بنظر عاطفت متوجه گردید، و مرا حاجت التفاتش در صدر آن معقل ارم قرین اشاره نموده *

9. Compare the literary merits of the *Shamsa wa Qahqaha* and the *Maqamat-i-Hamidi*, with reference to their style and diction. What position would you assign their authors among the Persian prose-writers ?

(Group A—Literature)

EIGHTH PAPER

Examiners— { MAULVI BADRUL ALAM,
PROF. MD. NIZAMUDDIN, PH.D. (CANTAB).

The questions are of equal value.

Answer any six questions.

1. Discuss and illustrate whether 'Ali Ḥazīn has succeeded in describing contemporary events and personalities graphically.

Or,

Narrate briefly the salient features of the life of 'Ali Ḥazīn.

2. Give the context and translate into English *any one* of :—

A

و شهری بان شکوه و رونق و لطافت و نزاهت و کثرت عمارات عالیہ و آثار قدیمہ و جدیدہ و انبوهی ناز و نعمت در ربع مسکون نشان نداده اند . همانا تربیت و تکمیل نفوس و ابدان انسانیہ از تاثیرات آن سرزمین ست ہمیشہ منشی افاضل و اکابر و مستعدان و هنرمندان بوده ، و هر قدر در تو صیف خصایص جمیلہ آن کوشیدہ شود هنوز نا گفته ماند ، اگر هوشمند جهاننیدہ آفاق گردیدہ بآن بلده رسیدی و اقامت نمودی عمر و فرصت یافتی هر آئینہ بخصوصیات و جہات امتیاز آن بر کل جہان آگاہ گشتی . حسن معیشت دران برای فقیر و غنی و مسافر و مجاور یکسان و تحصیل هر کمالی و هر گونه نعمتی میسر و آسان ، اهالی آن از هر طبقہ بفراس و زکا و مردی و مردمی و مروت آشنا ، جمهور خلقتش بعلیہ حیا و عفاف و رغبت بطاعات و مرضیات آراستہ مدارس و معابد بی شمارش طول لیالی و ایام بر ریاضت و عبادت سعادت‌مندان و حق طلبان معمورہ و ببرکت معدلت سلاطین هوشمند دین پرور و مائر علماء و اکابر فیض گستر در طبایع قاطبہ عوامش مراسم و قوانین ستودہ و روشهای پسندیدہ متطبع و معمول ، و امور مکررہ اعمال مذمومہ بغایت نادر و مستور بود *

B

و ایشان را کتابیست مشتمل بر یکصد و بیست سوره و آن را زبیر اول خوانند و عقیده ایشان اینکست صانع عالم کواکب و افلاک بیافرید و تدبیر عالم ایشان را گذاشت و پرستش ستارگان کنند و برای هر کوبی شکلی معین نموده هیاکل سازند و گویند صورت فلان و فلان کربست و در ضراعات و ترسالات به هر یک آداب و عبارات دارند و محققان ایشان گویند که سجده و پرستش کواکب و هیاکل نکنیم بلکه آن قبله است و جمیع این طایفه قایلند بتاثیرات اجرام علویه و هیاکل سفلیه یعنی تماثیل و اصنام و در سالف زمان حکما و علماء عالیشان درین طبقه بوده که صاحبان علوم مکنونه بوده اند *

عربی و فارسی نیکو دانستی و بمنطق و هیئت و هندسه مربوط بود و بعض کتب اسلامی نیز بمطالعه اش رسیده بود و شوقی بتحقیق بعض مطالب داشت و از خوف و عدم التفات علماء اسلام بآن طبقه از مقصود خود باز مانده بود صحبت مرا مغتنم شمرد و پس از چندی که از صفات و انصاف من آگاه شد اخلاص و محبتی استوار پیدا کرد و من انجیل از و آموختم و بشرح آن پی بردم و تحقیق عقاید و فروعات ایشان بواقعی نمودم *

3. Describe briefly the invasion of Nádír Sháh and the general massacre at Delhi as given by Házín.

Or,

Give a short sketch of 'Alí Házín's journey from Persia to India.

4. Discuss the merits and demerits of Abu'l-Fazl-i-Baihaqí as a court chronicler.

Or,

'In spite of archaism and lack of coherence Abu'l-Fazl-i-Baihaqí's prose style is marvellous.'

Discuss the above statement.

برخی از احوال سلطان مسعود و کین خواستن او به برادرش امیر محمد در عبارت فارسی سلیس بنویسید *

یا

ذکر بار دادن رسول امیر المؤمنین القادر بالله در ابتداء عهد سلطان مسعود *

6.

شرحی مختصر در باب :-

(۱) 'خوارز مشاه الترن تاش *

(۲) بوسهل زورنی *

(۳) علی حاجب بزرگ *

(۴) ابو نصر مشکانی ، بنو یسید *

یا

نامه ایکه سلطان مسعود بقدر خان نوشت تلخیص بکنید *

یا

سپاسنامه ایکه امیر طاهر از طرف اهالی ری در حضرت سلطان مسعود پیش کرد ، ان را اختصاراً بنویسید *

حال پذیرائی سلطان مسعود در شهر نیشاپور و مساعدت قاضی امام صاعد را ۶. مختصراً بنویسید *

یا

چرا ابو الفضل بهیقی از دست همگنان خویش نالان است *

8. عبارت دیل را در زبان انگلیسی ترجمه کنید :—

امیر یکی بستد و بفرواند و گفت بعینه هم چنین بمن از بطلان نوشته بودند که مضمون این ملطفها چیست ، سبحان الله العظیم . پادشاهی عمر بپایان آمده و همه مرادها بیافته و فرزندی را بی نوا بزمین بیگانه گذاشته یا بسیار دشمن ، اگر خدای عز و جل آن فرزند را فریاد رسید و نصرت داد تا کاری چند بر دست او برفت و واجب چنان کردی که شادی نمودی . خشم از چه معنی بوده است . بو سهل و دیگران که با امیر بودند گفتند پدر دیگر خواست و خدای عز و جل دیگر ، اینک که جایگاه مملکت و خزاین و هر چه داشت بغدادند ارزانی داشت و واجب است این ملطفها را نگاه داشتن تا مردمان آنرا بفرواند که پدر چه می سگالید و خدای عز و جل چه خواست و نیز دل و اعتقاد نویسندگان بدانند . امیر گفت چه سخن است که شما گوئید اگر بآخر عمر چنین یک جفا واجب داشت و اندرین او را غرضی بود و بدان هزار مصلحت باید نگریست که ازان ما نکه داشت و بسیار ذلت بافراط ما در گذاشته است *

(Group D.)

FIFTH PAPER

Examiners— { MAULVI MD. ISHAQUE, M.A., B.Sc.,
DR. M. IQBAL, M.A., PH.D.

The questions are of equal value.

Answer THREE questions from each group. Question 1 in each group MUST be answered.

Group A.

1. Translate carefully into English :—

نقش دان درون دلها است	نقشبند برون گلهاست
صانع دست و آنچه در دست او	مبدع هست و آنچه نا هست او
کوزه سیمین ببست بر دولاب	ساخت دولابی از زبرجد ناب
در هوا شمع و شمعدان گردان	کرد در راه نا جوانمردان
ذات او را مسلم است قدم	صنع او را مقدم است عدم
مایه را کرده قابل صورت	عقل را کرده قائل صورت
توهمی عقل را چه پنداری	عقل را داده راه بیداری
نقشبند قلم نگار قدم	کی تواند نگاشت در آدم
ز برش عقل و جان میانه ملی	آتش و باد و آب و خاک و فلک
همه از امر دان و امر از حق	خرد و جان و صورت مطلق

Or,

مطلع بر طلوع راز از دل	مستمع نفیست نیاز از دل
آنچه خواهد به پیش باز آید	چون در دل نیاز بکشد
کرده لبیبی دوست استقبال	یا ریش را ز شه ره اقبال
یک سلام از تو رو هزار علی	یا ربی از تو زد دو صد لبیبی

از بد و نیک خلق پیوسته	رحمت و نعمتش بنگسسته
در گهش را نیاز پیرایه	تو نیاز آر سود و سرمایہ
در پذیرد غم دراز ترا	بی نیازی او نیاز ترا
دوست بردش بلال بر درگاه	هوست برتن چوزلف یار سیاه
جامه ظاهرش ز بهر دلال	گشت بر روی حور مشکین خال
ای صف آرای جمع درویشان	وی نگهدار درد دلریشان
آنکه شد چون بهی بهش گردان	رانکه شد چون کمان زهش گردان
نیک درمانده ام بدست نیاز	کارم ای کارساز خلق بساز

2. Write a comprehensive note on the nature and contents of *حقیقة الحقیقة*.

3. 'Some suppose that the verse of the *Iadiqat* is more elevated and dignified than the elegantly ordered language of the *Mathnawi*.' Comment upon the above statement.

4. 'The poem (i.e. *Iadiqat*) is written in a halting and unattractive metre, and is, in my opinion, one of the dullest books in Persian.' Discuss.

Group B.

1. Explain in English or Persian :—

از خدا جویم توفیق ادب	بی ادب معروم شد از لطف رب
بی ادب تنهانه خود را داشت بد	بلکه آتش در همه آفاق زد
مایده از آسمان در می رسید	بی صداع و بی فروخت ربی خرید
در میان قوم مری چند کس	بی ادب گفتند کو سیر و عدس
منقطع شد نان و خوان آسمان	ماند رنج زرع و بیل و داسمان
باز عیسی چون شفاعت کرد حق	خوان فرستاد و غنیمت بر طبق
باز گستاخان ادب بگذاشتند	چون گدایان زلهها برداشتند
لابه کرده عیسی ایشان را که این	دایمست و کم نگردد از زمین
بد گمانی کردن و حرس آوردی	کفر باشد پیش خوان مهتری

Or,

Explain with reference to the context (in English or in Persian) :—

و آن گهانی آن امیران را بخواند	یک بیک تنها بهریک حرف راند
گفت هر یک را بدین عیسوی	نایب حق و خلیفه من توئی

و آن امیران دگر اتبّاع تو	کرد عیسی جبّله را اشیّاع تو
هر امیری کو کشد گردن بگیر	یا بکش یا خود همی دارش اسیر
لیک تا من زنده ام ابن را مگو	تا نمیرم این ریاست را مچو
تا نمیرم من تو این پیدا مکن	دعوی شاهی و استیلا مکن
اینک این طومار و احکام مسیم	یک بیک برخوان و بر امت فصیم
هر امیری را چنین گفت او جدا	نیست نایب جز تو در دین خدا
هر یکی را کرد او یک یک عزیز	هر چ آن را گفت این را گفت نیز
هر یکی را او یکی طومار داد	هر یکی ضدّ دگر بود المراد
جملگی طومارها بد مختلف	همچو شکل حرفها یا تا الف
حکم این طومار ضدّ حکم آن	پیش ازین کدیم این ضدّ را بیان

2. Trace the origin and growth of the mystic poetry in Persian to its culmination in the *Mathnawi*.

3. Discuss the influence of the *Mathnawi* on later *Sūfī* poetry. Name some of the later poems written in imitation of the *Mathnawi*.

مثنوی مولوی معنوی هست قرآن در زبان پهلوی 4

Support the statement made in the above line and say what is meant by *زبان پهلوی* and why?

(Group D)

SIXTH PAPER

Examiners.— (MR. L. BOGDANOV,
(MR. A. GHANI, M.A., M.LIT.

The figures in the margin indicate full marks.

Answer question 1, and ANY FIVE of the rest.

1. Explain in simple Persian, and write notes on the underlined words and expressions :—

30

A

بدانکه چنانکه درستی تن و دست و پای و چشم بآن بود که آنچه خاصیت اوست و او را برای آن آفریده اند بروی آسان برد و آنرا که طبع اوست در اصل فطرت دستدار

بود و این در دو چیز پیدا آید یکی در ارادت و یکی در قدرت اما ارادت آنکه هیچ چیز را درست تراز حق تعالی ندارد که معرفت خدای تعالی غذای دل است چنانکه طعام غذای تن است و هرتن که شهرت طعام از وی برود یا ضعیف شود بیمار است و هر دل که معرفت و محبت حق تعالی از آن رفت یا ضعیف شد بیمار است و برای این حق تعالی گفت قل ان کان آباءکم و ابناءکم الایة گفت اگر پدران را و پسران را و مال تجارت و عشیرت و قرابت و هرچه دارید دوست ترمیدارید از خدا و رسول و غزو کردن در راه او صبر کنید تا فرمان حق در رسد و ببینید اما قدرت آنست که فرمانبرداری حق تعالی بر وی آسان گشته باشد و حاجت نبود که بستم خود را بآن دارد بلکه خود لذت او باشد چنانکه رسول الله صلی الله علیه و سلم گفت جعلت قرة عینی الصلوة پس کسیکه این معنی از خود نیابد این علامتی درست است بر بیماری دل و بعلاج مشغول باید شد *

B.

معرفت حق تعالی از همه معرفت‌های دیگر خوشتر است که چون بدانستی که علم و معرفت خوش است شک نبود که بعضی از علوم خوشتر بود که هر چند که معلوم شریف تر و بزرگ تر بود علم وی خوشتر بود چه علم نهادن شطرنج از علم بازییدن شطرنج خوشتر است و علم سیاست مملکت و وزارت از علم زرگری و خیاطی خوشتر است علم معنی شرع و اسرار از علم نجوم و لغت خوشتر و اسرار کار وزیر در وزارت دانستن از اسرار کار اهل بازار خوشتر و اسرار سلطان دانستن از اسرار وزیر خوشتر پس هر چند معلوم شریف تر علم آن لذیذ تر پس نظر کن تا در وجود هیچ چیز شریف تر و عظیم تر و با کمال و با جلال تراز خداوند عالم که آفریدگار همه کمالها و جمالها است هست پس چگونه ممکن بود که نظاره آنحضرت پس معلوم شد که معرفت حق تعالی و معرفت صفات او از همه معرفت‌ها خوشتر *

2. Write a critical note on the style and subject-matter of the کشف‌المحجوب. Compare it with the کیمیای سعادت. 14

3. Give a short account of the life and works of al-Ghazali, and discuss his influence on the later Sufi literature of Persia. 14

4. Comment on seven of the following :— 14
 اهل صفة - تابعین - خیر الامم - رضا - رضوان - ذکر و فکر - طریقت - لیلۃ القدر -

روح القدس *

5. Write a biographical notice in English on the author of the *Kashfu-l-Mahjûb*. 14

6. Enumerate the existing editions and translations of the *Kimiya-yi Sa'adat* and of the *Kashfu-l-Mahjub*. 14

7. Translate into English *any one* of the following passages, and point out the peculiarities in spelling :— 14

از ابرهیم ادهم رح می آید کی گفت سنکی دیدم بر راه انکیده و بران سنک نبشته بود کی انت لا تعمل بما تعلم فكيف تطلب مالا تعلم تو بعلم خود عمل می نیاری معال باشد که نادانسته را طلب کنی یعنی کاربند آن باش کی دانی تا ببرکت آن نادانسته نیز بدانی - و انس بن مالک کوید رضة همة العلماء الدارئة و همة السفهاء الرواية از انچه اخوات چهل از علما منتفی باشد آنک از علم جاه و عز دنیا طلبد نه عالم بود زیرا ی طلب جاه و عز از اخوات چهل بود و هیچ درجه نیست اندر مرتبه چو علم کی چو آن نباشد یعنی علم هیچ لطیفه خداوند را تعالی نشناسد و چو آن موجود باشد همه مقامات و شواهد و مراتب را سزاوار باشد *

B

ابو الحسن نوری رح کوید الصوفیه هم الذین صَغَتْ اِر و احهم فصاروا فی الصف الاول بین یدی الحق صرفیان آنانند که جانها ایشان از کدورت بشریت آزاد گشتست و از آفت نفس صافی شده و از هو اخلاس یافته تا اندر صف اول و درجه اعلی با حق پیارمیده اند و از غیروی اندر رمیده - همو کویدرح الصوفی الذی لا یملک ولا یملک صوفی آن بود کی هیچ چیز اندر بند وی ناید و وی اندر بند هیچ چیز نشود و این عبارت از عین فنا بود کی فانی صفت مالک نبود و مملو نه از آنچ صَغَتْ مِلْک بر موجودات درست افتد و مراد از ین آنست کی صوفی هیچ چیز را از متاع دنیا و زینت عقبی ملک نکند و خود اندر تحت حکم و ملک نفس خود نیاید سلطان ارادت خود را از غیر بکسلد تا غیر طمع بند کی از وی بکسلد *

(Group D—Mysticism.)

SEVENTH PAPER.

Examiners— { MAULVI SHAH KALIMUR RAHMAN, M.A.
SIR A. SUHRAWARDY, Kt., M.A., Ph.D., D.Litt.,
BARRISTER-AT-LAW.

The questions are of equal value.

Attempt any six questions.

1. Give the various theories with regard to the origin of Sūfism, and state which of them you take to be the correct one, and why?
2. What is meant by 'The Perfect Man' in Sūfism? Write a short dissertation on the subject, basing your answers on the findings of Jili.
3. How is the intellectual and spiritual development of man attained? How can you account for the upward progress of man?
4. What are the main principles underlying the Doctrine of Sūfism? Give a brief account of some of them.
5. How far has Sūfism influenced Persian Poetry? Give a brief survey of such literature.
6. Explain the following terms :—
سالى مجذوب - مجذوب سالى - حاليه - اتحادية - نور محمدية - مرید -
مراد - فنا في الله -
7. Give a critical exposition of اسدراج - كرامت - معجزة.
8. How many kinds of توحيد are there according to Sūfis? Give a critical estimate of each.
9. Give a brief summary of the views of Shaykh Abu Sa'id ibn Abi'l-Khayr on Sūfism.

(Group D—Mysticism.)

EIGHTH PAPER.

Examiners— { MAULVI M. HUQ,
DR. HADI HASAN, M.A., Ph.D.

The questions are of equal value.

Answer ANY SIX questions.

1. Indicate precisely (a) the Arabian, and (b) the Persian element in Islamic mysticism.

2. Give in *Persian* a short biography of the biographer Farid-ud-Din Attar.
3. Write a critical review of the *Nafahat-ul-Uns*.
4. 'The views which have been advanced as to the nature, origin, and source of the Sūfī doctrine are as divergent as the etymologies by which it is proposed to explain its nature.' Discuss.
5. Give an account of some of the important Persian works dealing with the biography of the Persian and the Indian Sūfis.
6. Write a short note on the Sūfī 'orders' (*silsilas*), and point out the peculiar features of each.
7. Give an account of the life and writings of the founder of *either* the Suhrawardī or the Chishtī 'order.'
8. What is the judgment of early Muslim historians regarding Husayn b. Manṣūr al-Ḥallāḡ? To what does he owe his fame? Discuss fully.
9. Write notes on the following :—

* روايع - سفينة الاوليا - رسالة تشيريه - اخبار الاخبار - فوايد الفوائد

INDIAN VERNACULARS—BENGALI

FIRST PAPER

The questions are of equal value.

First Half

Examiner—RAI BAHADUR DR. D. C. SEN, B.A., D.LITT.

1. (a) Compare and contrast the *Chandi Mangal* of Kavi Kankan with the *Annada Mangal* of Rai Gunakar, and show that the latter made a departure from his predecessor in regard to the incidents and plot of his poem in order to conform to the canons of Sanskrit Poetics.

Or,

- (b) Give accounts of the life and works of *any two* of the following poets :—

(i) Ram Ram Basu, (ii) Ram Basu, (iii) Nidhu Babu, (iv) Ketaka Das Ksemananda, (v) Chandravati.

2. (a) Estimate the value of Mohamadan contributions to old Bengali literature.

Or,

- (b) Describe the activities of the Fort William College in promoting the cause of Bengali prose.

8. (a) Trace the historical causes leading to the adoption of some of the old Bengali songs and poems by people outside this province.

Or,

(b) Show the essential features of the Brahminic literature of the old school as contrasted with those of the contemporary Vaishnava literature.

Second Half.

Examiner—PROF. KHAGENDRANATH MITRA, RAI BAHADUR, M.A.

Answer ANY THREE questions.

1. Trace the growth of the Vaishnava movement of Bengal and its influence on Bengali poetry.
2. Describe the place of Vidyapati in the history of the Vaishnava literature. Discuss the question of the date of Vidyapati.
3. What is meant by 'rasas' in Vaishnava poetry? Explain and illustrate the *rasa* which goes by the name *Sakhya* or friendship.
4. Write short notes on :—
 - (1) Purva Raga.
 - (2) Shreenivasa Acharya.
 - (3) Ujjawala Nilmani.
 - (4) Raya Ramananda.
5. Give a short account of the principal biographies of Shree Chaitanya written during his life-time or shortly after his demise.

SECOND PAPER

The figures in the margin indicate full marks.

First Half

Examiner—MR. BASANTARANJAN RAY, BIDWATBALLABII.

Answer Question Nos. 1 and 2, and ANY ONE of the rest.

1. Explain the following with notes on the words underlined :— 8+8

(a) ছড়গই সঅল সঠাবে স্বধ
 ভাবাভাব বলাগ ন ছুধ ॥
 দশবলরঅণ তরিস দশনিসেঁ
 বিজ্ঞাকরি দমকুঁ অকিলেসেঁ ॥

- (b) রাগ দেশ মোহ লাইঅ ছার
 পরম মোখ লবএ মুত্তিহার ॥
 মারিঅ শাস্ত নগন্ম ঘরে শালী
 মাঅ মারিঅ কারু ভইঅ কবালী ॥

Or,

আলে গুরু উএসই সীস
 বাক্পথাতিত কাহিব কীস ॥
 জে তই বোলী তে তবি টাল
 গুরুবোধসে সীসা কাল ॥

2. Explain fully with reference to the context :—

9 + 9

- (a) অহোনিশি যোগ ধেআই ।
 মন পবন গগনে রহাই ॥
 মূল কমলে কয়িলে মধুপান ।
 এবৈ পাট্রোঁ আক্ষে ব্রহ্ম গেআন ॥
 টড়া পিঙ্গলা স্তময়না সন্ধী ।
 মন পবন তাত কৈল বন্দী ॥
 দশমী ছুয়ারে দিলেঁ কপাট ।
 এবৈ চড়িলেঁ মো সে যোগ বাট ॥
- (b) কোণ আস্তভ খনে পাঅ বাঢ়ায়িলেঁ ।
 ইছী জিঠী আয়র উবট না মানিলেঁ ।
 শুন কলসী লই সখি আগে জাএ ।
 বাঞর শিআল মোর ডাহিনে জাএ ॥
 বাশীত লাগিআ মোর কি ভৈল বড়ায়ি ।
 আখায়িল ঘাঅত বিষ জালিল কাহাঞি ॥
 কথো দূর পথে মেঁ দেখিলেঁ সগুণী ।
 হাথে থাপর ভিখ মাজএ যোগিনী ॥

Or,

নির্দল কমল বঅনে নীল উতপল নয়নে
 রতন কুণ্ডল শোভে কন্নে
 মাণিক দশন যুতী গিএ শোভে গজমুতী
 জীএ রাহি তার দরশনে ॥
 চন্দন চর্চিত গাএ ঘাঘর মগর পাএ
 হেন বেশ হেন দরশনে ।
 নেত পরিধান লাসী তাথে মোহারী বাণী
 সে কৃষ্ণ গেলান্ত গগনে ॥

3. Indicate briefly the gradual development of Śūnyavāda, and show how it has been treated in the Caryyāpadas. 16

4. Write notes on the Vibhaktis as used to indicate different Cases (Kārakas) and Tenses (Kāls) in the Caryyās of Kāṇha. 16

6. Give a critical estimate of Śrī-Kṛṣṇa-Kīrtana as an important work of the early Middle Bengali period. 16

Second Half

Examiner :— MR. MANINDRAMOHAN BASU, M.A.

Answer Questions 1 and 5, and ANY ONE of the rest

1. Explain fully with reference to the context :—

8 + 8

(a) চিলরূপে আইসে জম সাচানরূপে জাএ ।
 মাছিরূপ ধরি জম ঘরেতে সামাএ ॥
 কায়া মায়া সব ছাড়ি বলে ধরি নিব ।
 এমন সুন্দর তহু থাকেত মিশিব ॥
 ভ্রাতি ভৈনে কান্দিব বেইলৈর আড়াই পহর ।
 পশ্চাতে চিন্তিব সে আপনা বাড়ি ঘর ॥
 জননী কান্দিব জান পুরা ছয় মাস ।
 নারীএ কান্দিব জান লোকের আসপাস ॥
 মৎস্ত চিনে উচ খোচ পানিএ চিনে নাল ।
 মাএ সে জানে পুত্রের বেদন জার গর্তের সাল ॥

Or,

কার কাছে এড়ি যাইব হংসরাজ ঘোড়া ।
 কার ঠাঞি এড়ি জাইমু গাএর খাশা জোড়া
 ধনু বাণ লেজা কাতে এড়িমু লাথে লাথে ।
 তীর তাম্বু বাণ কাতে এড়িব ঝাকে ঝাকে ॥
 বাপের মিরশ এড়ি যাইমু গৌড়র সহর ।
 দাদার মিরশ এড়ি জাবে কামলাক নগর ॥
 তুমি মাএর জত বাড়ি কলিকা নগর ।
 আমি বাড়ি বাঙ্কিয়াছি মেহার কুল শহর ॥
 চল্লিশ বাজাএ কর দেএ আমার গোচর ।
 আমা হোতে কোন জন আছএ ডাক্তর ॥

(৮) দেখিলুম মীননাথ বলশক্তি নাই ।
 বগুলাটি বুঝে জেন আহাৰ ধায়াই ॥
 তিন দিন আয়ু তার আছএ বিশেষ ।
 নিবারে যমের দূতে করিছে আদেশ ॥

and

গলাত নগুণ দিল কপালেত ফোটা ।
 মাথাএ অালগ ছাতি সাক্ষাতে জোগবাটা ॥
 হাতে করি লইল নাথ স্রবর্ণের ডাক্ত ।
 আগে পাছে দুই দূত লজ মোহালজ ॥

Or,

সংগোপ্ত আছএ প্রাণ সঙ্কেত ব্যাপিত ।
 সকল সঙ্কেত আছে যঠ বিবজ্জিত ॥
 গাছ মৈখো বীজ জেন বীজ মৈখো গাছ ।
 এহি মত ব্রাহ্মজ্ঞান শুন মোহারাজ ॥

2. Name all the Gurus of Nātha cult mentioned in the Gorakṣa-Vijaya. What do you know of them and their activities ? 9

3. What do you know of Gopīcandra ? Is he a historical personage ? What, in your opinion, is the age of the Gāthā you have read about him ? 9

4. What do you know of Kṛttivāsa ? Account for the great popularity of his Rāmāyaṇa, and discuss in detail the innovations that he introduced in that work. 9

5. Explain the following, adding notes wherever necessary :— 13 + 12

(a) অপণে রচি রচি ভবনির্বাণা
মিছে লোঅ বদ্ধাবএ অপনা ॥
অন্তে ন জাণ'হু অচিস্ত জোই
জাম মরণ ভব কইসণ হোই ॥
জইসো জাম মরণ বি তইসো
জীবন্তে মঅলে' নাহি বিশেসো ॥
জে সচরাচর তিঅস ভমন্তি
তে অজ্জরামর কিম্পি ন হোন্তি ॥

(b) নীল জলদ সম কুন্তল ভারা ।
বেকত বিজুলি শোভে চম্পক মালা ॥
শিশত শোভএ তোর লাল সিদ্ধুর ।
প্রভাত সমএ যেন উয়ি গেল সুর ॥
ললাটে তিলক য়েহ নব শশিকলা ।
কুণ্ডল মণ্ডিত চাক্র শ্রবণ যুগলা ॥
বিষফল জিনী তোর আধরের কলা ।
বাহু যুগাল কর রাতা উতপলা ॥
নাসা তিলফুল তোর আতী আহুপামা ।
গণ্ডস্থল শোভিত কমল দল সমা ॥

THIRD PAPER.

Examiner.—DR. TAMONASCHANDRA DASGUPTA, M.A., PH.D.

The figures in the margin indicate full marks.

First Half

1. Answer one question from each group :—

26

A.

(i) What are the chief characteristics of a Maṅgal-Kāvya? In what respects do the Maṅgal-Kāvyas differ from the Sīvāyanas

(ii) What light does the autobiography of Kavikāṇḍa Mukundaram, as contained in his Chāṇḍī-Kāvya, throw on contemporary Bengali life, and what references to the poet's family do we get in it?

B.

(i) Estimate the literary value of the East Bengal ballads.

(ii) Draw a neat picture of Bengali conjugal life from materials available in the East Bengal ballads.

2. Explain, with reference to the context, *any four* of the following passages, clearing allusions and figures of speech where necessary :— 16

(a) বৈশাখে হৈলা বিষ বৈশাখে হৈলা বিষ ।

মাংশ না বিকায় সৰ্বজন নিরামীস ॥

(b) ঘোড়া লইল গাধা লইল কত কইব আর ।

সঙ্কেতে করিয়া লইল রাও চণ্ডালের হাড় ॥

(c) নিজ বল পূর্থে করি যেকাদশে ধরি গিরি

স্বধা হেতু জলধি মন্থনে ।

লিখে কুর্খ অবতার গিরি পিঠে ফিরি জার

পিঠ কৈলা অনেক জতনে ॥

(d) ফজর সময় উঠি বিছায়া লোহিত পাটি

পাঠাবরি করয়ে নামাজ ।

ছিল মালী মালা ধরে জপে পীর পেকাষরে

পীরের মোকামে দেই সাজ ॥

(e) কৰ্ম্ম দোষে বেউলা রাড়ী শিরেতে বসিয়া ।

মরা পতির কাছে বাপে দিয়া গেছে বিয়া ॥

(f) বাড়ীর শোভা বাগবাগিচা ঘরের শোভা বেড়া।

কালের শোভা পুত্র ছাওয়াল আসমানে চান্ তারা ॥

3.

Either,

Write a short essay on the heroines of the East Bengal ballads.

8

Or,

Discuss the religious background of Mukundaram's Chandi-Kāvya.

Second Half

Examiners :— { Mr. SYAMAPRASAD MOOKERJEE, M.A., B.L., BAR-AT-LAW.
Mr. BISWAPATI CHAUDHURI, M.A.

1. Answer *one* question from *each* group :—

26

Group A.

(a) Write a short essay on Madhusudan's treatment of character and conception of theme as reflected in মেঘনাদ-বধ, pointing out his chief departures from Vālmiki's *Ramayana*.

(b) Examine the statement that বৃত্তনহার is an unsuccessful imitation of মেঘনাদ-বধ.

(c) Discuss the statement that the poems of বলক are characterized by a common theme. Illustrate your answer by quotations.

Group B.

(a) According to Aristotle the hero of a tragedy should not be a man too noble or virtuous, as the downfall of such a man will be repugnant to the dramatic susceptibilities of the audience. Has Girishchandra in his portrayal of *Joges* justified or refuted this canon, and with what success?

(b) Give a critical estimate of Girishchandra's *Praphulla*, judging it by the principles of old Indian dramaturgy.

2. Explain, with reference to the context and clearing allusions and figures of speech where necessary, *one* of the passages from Group A and *two* from Group B :—

15

Group A

(a) চেষ্টায় ব্যাক ফেল হওয়া রোধ হয় না, দরিদ্র হওয়া রোধ হয় না, ভাই চোর হওয়া রোধ হয় না, বুক মাকে বুলাবনে পাঠান হয় না; চেষ্টায় কোন কার্যই হয় না। আমি আজীবন চেষ্টা কর্লেম, কি ফল পেলেম? চিন্তা! চিন্তা! চিন্তায় চিরকাল গেল!

(৪) মদন দাদা, যিক তোমায় ! মা বলতেন, তুমি একজন সাধু-পুরুষ,
তোমার কি এই বুদ্ধি ? ' তুমি তুচ্ছ প্রাণের ভয়ে অর্থ্য কর ? প্রাণের ভয়ে
বাক্স ভেঙে চুরি কর ? প্রাণের ভয়ে কচি ছেলে এনে রাক্ষসের মুখে দাও ?
এই প্রাণ কি তোমার চিরকাল থাকবে ?

Group B.

- (a) ভুলে থাকা নয় সেত ভোলা ;
বিশ্বতির মর্মে বসি' রক্তে মোর দিয়েচ যে দোলা
নয়ন-সম্মুখে তুমি নাই,
নয়নের মাঝ-খানে নিয়েচ যে ঠাই ;
আজি তাই
শ্রামলে শ্রামল তুমি, নীলিয়ায় নীল ।
- (b) বসিয়া ভবানীপতি ভাবে নিমগন ।
কোটি ব্রহ্মাণ্ডের প্রতিমূর্তি চারিধারে,
হেরিছেন কুতূহলী যোগীন্দ্র মহেশ
ধ্বংসের অপূর্ব গতি ! বিশ্ব চরাচরে,
কতরূপে কত জীব, কত জড় তত্ব
মুহূর্তে হইছে লীন । নিগূঢ় রহস্য—
নিসর্গ বহ্নন-সুজ্ঞ-ছেদন-প্রণালী ।
- (c) যেদিন আবণ নামে দুর্গিবার মেঘে,
দুইকূল ডোবে স্রোতোবেগে,
আমার শৈবাল-দল
উদ্দাম-চঞ্চল,
বস্ত্রার ধারায়
পথ যে হারায়,
দেশে দেশে
দিকে দিকে যায় ভেসে ভেসে ।

3. Give in elegant Bengali the substance of the following :—

9

পুষ্প দিয়ে মারো যারে
চিন্‌ল না সে মরণকে ।
বাণ খেয়ে যে পড়ে, সে যে
ধরে তোমার চরণকে ।
সবার নীচে ধুলার পরে
ফেল যারে মৃত্যু-শরে
সে যে তোমার কোলে পড়ে
ভয় কি বা তা'র পড়নকে ?
আরামে যার আঘাত ঢাকা,
কলঙ্ক যার স্নগন্ধ
নয়ন মেলে দেখলে না সে
রক্ত মুখের আনন্দ ।
মজ্‌ল না সে চোখের জলে,
পৌঁছল না সে চরণ তলে,
তিলে তিলে পলে পলে,
ম'ল যে জন পালকে ।

FOURTH PAPER

First Half

Examiner—MR. PRIYARANJAN SEN, M.A.

The figures in the margin indicate full marks.

Only one question is to be attempted, and the answer is to be written in the form of an essay.

1. Give a short account of Bengali verse forms under Western influence. 50

2. Trace the Western influence in Bankimchandra's non-fictional writings, with special reference to the *Dharmatattwa* and the *Krishnacharitra*. 50

3. 'Rabindranath in his early years had come under the influence of the West, and the result was whole-some.' Discuss the above statement, with special reference to the *Kavikāhinī*, *Māyūr Khelā*, and *Prakritir Pratishodh*. 50

Second Half

DR. SUSILKUMAR DE, M.A., D.LITT.

The questions are of equal value.

Attempt only one question in the form of an essay, which must be written in Bengali.

1. Describe the various landmarks in the progress of the Bengali Prose Style in the first half of the 19th century (till 1857), and estimate their importance.
 2. Give an estimate of the literary as well as historical value of the prose writings of Śvar Chandra Vidyāsāgar and Akṣay Kumār Datta.
 3. Trace the beginnings of the descriptive and narrative prose writing in Bengali in the first half of the 19th century (till 1857).
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INDIAN VERNACULARS—HINDI

FIRST PAPER

The questions are of equal value.

First Half

Examiner—MR. LALTAPRASAD SUKUL, M.A.

NOTE :—Any three questions will carry full marks.

1. Examine and account for the literature produced by the 'Sant-poets' with regard to the works of Kabirdas as their main pivot.
2. What reflections of contemporary history and current of thought can be traced in the works of 'Bhushan' ?
3. Discuss the growth of the art of criticism in Hindi literature. Whom do you regard to be the first critic of Hindi literature ?
4. Trace the development of Drama in Hindi literature from the beginning of the 19th century.
5. Show your acquaintance with four of the following :—

१। भक्तमाल, रागी कितकी की कहानी, नील-देवी, चन्द्रावली चौरासी वैष्णवों की बार्ता, अखरावट चन्द्रकला भानुसुन्दर साकेत, प्रिय प्रवास ।

Second Half

Examiner—MR. NALINIMOHAN SANYAL, M.A.

Answer any three of the following questions.

1. Distinguish between the different conceptions of God—निर्गुण, सगुण, and साकार. Under which of these categories did the God of Kabir and that of the Sufi Hindi poets fall, and under which did Tulsidās conceive Śrī Rām, and Surdās Śrī Krishna? Discuss this question fully.

2. How does Tulsidās differ from Kabir as a religious reformer, and from Surdās as a great poet?

3. Can you account for the paucity of Hindi writers on the life and character of Rām and the popularity of the *Rāmacharitmānas*? Discuss Kesavdās's claims to be regarded as a *Bhakt* poet.

4. Explain clearly what is meant by mysticism (रहस्यवाद in literature. Give a brief outline of its progress in Hindi literature down to the present times, naming the earliest poets in whose writings traces of it can be discovered, and showing what impetus it has received of late from outside influences.

5. What is the Vaishnava-theory of the various personal relations that can subsist between God and His worshiper? How do you characterize the प्रेम of Yaśodā, of the Gopis, of Mirā Bāi, Lakshman, and of the cowherd boys of Braja?

SECOND PAPER.

First Half.

Examiner—PANDIT SAKALNARAYAN SARMA

The figures in the margin indicate full marks.

[क] विहसितवरं लगन लगन खिनौ नरिदं
 वजी द्वार द्वार सुखानन्द दुन्द (१)
 गढनं गढे पति सब बोलि लुचे
 सर्व चाख्यं भूपकटु बंस लुचे (१)
 गहि तेग चहुवान हिंदुवान रानं
 गजं जूय परिकीप कीहरिसमान ३)

करे बख्खमुच्छं करि कुम्भ फारे
वरं सुरसामन्ताडु कि गर्ज भारी (४)

[ख] तब तू मारबोई करति

रिसनि आगे कछि जो आवत अवलै भांछे भरति
रोसकै कर दावरी लै फिरत घर घर धरति
कठिन द्विय करि तब जो बांधी अब दया करमरति
वृपति कंस बुलाइ पठयो बहुत को जिय डरति

[ग] गर्भकै, अर्भक काटन को पटु धार
कुठार कराल है जाकी ।

सोई हौं बूझत राजसभा धनु
को दख्यो हौं दलि हौं बल-ताको
लघु आनन उत्तर दैत बड़ोलरि-
है भरिहै करिहै ककु साकी
गोरी गह्वर गुमान भरी कही कौसिक
छोटीसी डोटी है काकी

[घ] ताकि है तमकि ताकी और को ?
जाके है सब भांति कपिकेसरी किशोर की
जनगंजन अरिगन गंजन खलवर जोर की
वेद पुरान प्रगट पुरुषारथ सकल सुभट सिर मीर की

क और ख का अर्थ अवश्य लिखो । ग और घ में किसी एक का अर्थ लिखकर बताओ ।

१५

१ : (a) “नरिदं,” “लुरे,” “दुदं”—इन शब्दों के शुद्ध रूप प्रकटित कर ;
“दावरी,” “पत्ति,” “मुत्ते” तथा “अर्भक शब्दों के मानी कही ।

५

(b) [क] में रोति और [ख] में गुण क्या है, इनका विचार कारण निर्देशपूर्वक करना चाहिये ।

२०

(c) वाचक आदि शब्दों तथा वाच्य आदि अर्थों में “नरिदं” तथा “कपिकेसरी” शब्दों का अन्वयार्थ किस शब्द और किस अर्थ में होता है ?

५

२। राखों में अपने पठित अंश से और और रीति रसका भेद दिखलाओ ।

५

३। [घ] में कौन रस है ? और राखों में उसकी गचना है कि नहीं ? अपने बताये हुये रस के स्थायीभाव और संचारीभाव की संघटना उक्तपद्य में करो ।

१०

Second Half.

Examiner—PANDIT AMBIKAPRASAD BAJPAL.

The questions are of equal value.

Any three questions are to be answered.

1. चावग्रक टिप्पणियों सहित नीचे लिखे पद्यों की व्याख्या हिन्दी में कीजिये :—

- (a) टूटे मन नौ मोती, फूटे मन दस काँच ।
लोन्ह समेटि सब अभगन. होइगा दुख कर नाच ॥
- (b) निर्मल मन्य कीन्ह तेइ. जेइ रे दिया किछु हाथ ।
किछु न कोइ लेइ जाइहि, दिया जाइ पै साथ ॥
- (c) ई माया अग मोहिनी, मोहि सि सब अग धाय ।
हरिचन्द सतके कारने, घर घर गयो बिकाय ॥
- (d) मन पाँचोंके बस परा मनके बस नहि पाँच ।
जित देखूं तित दौ लगी, जित भागूं तित पाँच ॥

2. नीचे लिखे पद्यों का भावार्थ हिन्दी में लिखिये :—

- (a) मैं भँवरा तोहिं बरजिया, बनबन बाम न लेय ।
अटकोगा कहूँ बेलसे तडपि तडपि जिय दिय ॥
- (b) नाम गटा तो क्या हुआ, जो अन्तर है हित ।
पतिवरता पतिश्री भजै, मुख से नाम न लेत ॥
- (c) पपिहै जाय प्रकारक, पंखिन आगे रोय ।
तौनि लोक फिर आयक', बिनु दुख लखै न कोय ॥
- (d) सुमिरन ऐसा कीजिये, दूजा लखै न कोय ।
घोंठ न फरकत देखिये प्रेम राखिये गोय ॥

3. कबीर साहब के विषय में जो कुछ आप जानते हैं लिखिये ।

4. तुलसी और जायसी के काव्यों की तुलनात्मक आलोचना करके बताइये कि लोकहितकी दृष्टि से किसने अधिक काम किया है ?

5. उल्लास, वक्त्रीक, व्याजीक और परिकर अलङ्कारों के लक्षण सोदाहरण लिखिये ।

THIRD PAPER

First Half

Examiner :—PANDIT SAKALNARAYAN SARMA

The figures in the margin indicate full marks.

- १। (क) अग्री तरयौनाही रछौ, सुति सेवत इक अंग
नाक बास वेसर लछौ, बसि मुक्तान के संग (१)
हे नोसों कैवा कछी तू जिनि इन्ह पत्थाय
लगालगौ करि लो अनलि चरमैं छाई लाय (२)

- (ख) कारनामा बह बहुत आला रहा
आपकी करतूत हे भोछी बड़ी
मुंह दिया था देवने ही ती बना
आपकी क्या मुंह बनाने की पड़ी (१)
इस तरह का बना कलिया है।
जो कि सारी मुसोबतें सइली
बेधड़क आग मुंह लगल लेवे
जोभ बातें गरम गरम कहली (४)

- (ग) बचैगा न समुझाने बहलोलखां अयाने,
भूषण बखाने दिल आनि मेरा बरजा।
तुम्हने सवाई तेरा भाई सलहेरि पास
कैद किया साथ का न कोई वीर गरजा।
साहिन के साहि उसी औरंग के लीन्हें गढ़
जिसका तू साकर औ जिसकी तू परजा।
साहिका ललन दिली दलका दलन अफ-
जल का मलन सिवराज आया सरजा ॥

- (घ) पैज प्रतिपाल भूमि भारको इमाल बहुत
बलकी अमाल भयी दण्डक जहान की।
साहिनकी साल भयी ज्वाल की ज्वाल भयी
हरकी कपाल भयी हारकी बिषाण की।

बीररस स्थाल सिवराज भुवपाल
 तुव हाथ की विसाल भयी भूषण बखान की ।
 तेरी करवाल भयी दक्खिन की ढाल भयी
 हिन्दुकी दिवाल भयी काल सुरकान की ।

इन (क) (ख) (ग) और (घ) में किसी तीन के अर्थ छन्द के साथ लिखी ! १२

२। (a) “देवने हीनो” “उगल खेव” यहां कौन से दीप हैं ? “मुक्तन के संग”
 “लियननि” इनमें ‘न’ और ‘नि’ अक्षर से कवि ने कौनसा अभिप्राय प्रकटित किया है ? ८

(b) ‘हे नीलो’ ‘तुमने सवाई’। ‘साहिन के साहि,’ ‘साहिका ललना’ यहां
 ‘सो’ ‘ने’ और ‘के’ तथा ‘का’ विभक्ति एकार्थक हैं या भिन्नार्थक ? इन पर विचार करो। ५

(c) (घ) में ‘की’ विभक्ति कई बार प्रयुक्त है ? ‘की’ विभक्ति जहां जिस कारकमें
 व्यवहृत हुई हो उसका नाम और अर्थभेद बताओ। ‘उरमें लायीलाय’ इस वाक्यांशका
 व्याकरण लिखी तथा यह कहो कि ब्रजभाषा की कविताओं में ‘ने’ विभक्ति क्यों नहीं
 प्रयुक्त होती ? १०

३। कविलोग प्राचीन पद्यों में ‘ख’ ‘श’ तथा ‘ष’ नहीं लिखते थे इसका क्या कारण है ?

४। उम्मेदा, समासीति, रूपक तथा श्लेष इनके लक्षण लिखी तथा यह विचार करो कि
 मद्दित्य से अलङ्कार हटा दिया जाय तो क्या हानि है ? १०

Second Half

Examiner—PANDIT JAGANNATH PRASAD CHATURVEDI

The questions are of equal value.

The first and second questions and any one of the remaining four are to be attempted.

1. नीचे लिखे पद्यके सम्बन्ध में आप क्या जानते हैं सरल हिन्दी में विस्तारपूर्वक लिखिये
 और छन्द तथा अलङ्कार भी बताइये :—

यही स्वर्ग सुरलीक यही सुरकानन सुन्दर ।

यहि अमरनकी ओक यहीं कहुँ बसत पुरन्दर ॥

2. नीचे लिखे पद्यकी व्याख्या सरल हिन्दी में विशद रूप से कीजिये और छन्द तथा
 अलङ्कार के नाम लिखिये :—

मनु तीरथ मय ज्ञान चरित की कांवरि लीन ।

के भूमील खमील दीउकर अमलक कीने ॥

जगवृषि तौलन हेतु मगधुं यह तूला बनाई ।

भक्ति मुक्ति की जुगल पिटारी के खटकाई ॥

मनु गांवनों श्रीराजके, बीना ह फलती भई ।

कै राग सिन्धु के तरन हित, यह दीज तूंची लई ॥

3. "और सब गढ़िया, मन्ददास जड़िया" की व्याख्या कीजिय और "चटछाप" का वर्णन कीजिय ।

4. नाटक लिखने में किन किन बातों का विचार करना चाहिये ? प्राचीन प्रणाली से लिखना चाहिये या नवीन से ? आप अपनी सन्मति सप्रमाण कीजिये ।

5. वर्तमान कवियों के बारे में आपकी क्या धारणा है और उनका भुकाव किस ओर है ? अच्छी तरह समझाइये ।

6. ब्रजभाषा और खड़ीबोली के गुण दोष प्रमाणसहित लिखिये

FOURTH PAPER

The figures in the margin indicate full marks.

First Half

Examiner—MR. LALTAPRASAD SIKUL, M.A.

Write an essay in Hindi of about 1,500 words on *one* of the following subjects :— 50.

- (1) Trace the effect of the political changes in Northern India on the growth and development of Hindi literature.
- (2) Tendencies of contemporary Hindi poetry.
- (3) The significance of Krishna and Radha in the 16th and 17th-century Hindi literature.

Second Half

Examiner—PANDIT AMBIKAPRASAD BAJPAI

Write an essay of about 1,500 words on *one* of the following subjects :—50.

- (1) 'The speech generally used by the Mussalmans has practically no material difference from Hindi or Hindusthani, which is the speech of the Hindus.' Discuss and comment on the above.
- (2) Estimate the extent and value of the foreign words that Hindi has accepted as loan from different languages.
- (3) In your opinion who was the first author to attempt to form a common language for India ? How far did he succeed ?

INDIAN VERNACULARS—ASSAMESE (SUBSIDIARY)

FIFTH PAPER.

The figures in the margin indicate full marks.

Answers may be given either in Assamese or in English.

First Half

Examiner—MR. ABMIKANATH BORA, M.A.

1. Briefly reproduce the story contained in *Barphukanar Git* in the form of a historical narrative. 16
2. Delineate the character of Purnananda Buragohain as far as it comes out in *Barphukanar Git*. 16
3. Explain the following passages with reference to the context :—
3 × 6 = 18

- (1) কিয় মাৰ হাই,
একো আহোমৰ পিতা-মাতা নাই।
নেমাৰিবি হাই,
পিতেকৰ মঙ্গলক বাপেকে খায়।
- (2) চিৰি লুইতে ফুকনদেউ ভটীয়াই গল
কোনে বোলে এদা
পৰ্বতীয়াফুকনে চেলেকী নায়েবে
দিলে পাচে পাচে থেদা।
- (3) বাম কৃষ্ণ বোলোতে, মুৰত পানী ঢালোতে
ঘপহাই মাৰিলে দা।
নহবলৈ বল
কোমোৰা ছিদ্ধাদি দুমোখৰ হল।

Second Half

Examiner—MR. SURYYAKUMAR BHUIYAN, M.A.

4. Point out briefly the distinctive features of the prose of *Kathā-Gitā* and of modern Assamese prose. 16
5. Give an account of the Burmese atrocities in Assam as far as they come out in *manomali*. 16

6. Explain the following passages with reference to the context :—

3 × 6 = 18

(a) আমাৰ মনোমতী নকৈ ফুলিব খোজা এপাহি পহুম, আৰু পমীলা ভালকৈ ফুলা এপাহি গোলাপ ফুল।

(b) সখি! তোমাৰ এইটোহে হুথনে? তুমি এই অলপ কথাতেই নিৰাশ হৈছানে? নিৰাশ নহবা। বোগ চাই ঔষধ আছে, চুলা চাই সোপা আছে, ডেকা বৰুৱাৰ মনৰ ভ্ৰম শুচাব পৰা ঔষধ এপালিও মোৰ হাতত আছে। তুমি চিন্তা নকৰিবা।”

(c) সিহঁৰ ভৰিৰ শব্দত শহাকণীয়া পমীলাই তৎক্ষণাত সাৰ পালে। চাব মাৰি উঠি লৰি পচিমৰ দুৱাৰ মুখলৈ গল।

SIXTH PAPER

The questions are of equal value.

Answers may be given either in Assamese or English.

First Half

Examiner—MR. BANIKANTA KAKOTI, M.A.

Attempt any three questions.

1. Compare and contrast the early Vaishnavite literature of Assam and Bengal in point of subject-matter,

2. Name the principal literary works of Sankardev, and estimate his influence upon Assamese language and literature.

3. What, according to the author of *Sahitya-vichar*, makes the difference between prose and poetry? Examine the main characteristics of each.

4. Write what you know of four of the following authors and their works :—

হেম সবস্বতী; মাধৱ কন্দলি; পীতাম্বৰ দ্বিজ; মাধৱ দেৱ; অনন্ত কন্দলি;
বাম সবস্বতী; ভট্টদেৱ।

5. Show your acquaintance with four of the following.—

ডাকৰ বচন; ভীমচৰিত পুথি; কাণ-খোৱা; অকণোদয়; হেমকোষ;
অসমীয়া সাহিত্যৰ চানেকি।

Second Half

PROF. SUNTIKUMAR CHATTERJEE M.A., D. LITT.

Attempt ANY THREE questions.

1. Institute a short comparison between Assamese and any other Indian Vernacular as vehicles of expression.

2. Write a note on the conjugation of the Assamese verb.

3. Name *five* important formative affixes of Assamese with their counterparts in Bengali or any other Indian Vernacular. Quote examples illustrating the function of these affixes in Assamese.

4. Name the case-endings in Assamese and Bengali or any other Indian Vernacular. Quote or frame sentences, illustrating case-usages in Assamese.

5. Write *notes* on *five* of the following Assamese words and forms:—

এজন ; বাটকৰা ; একৈশ ; তিবোতা ; লৈ as in কৰিবলৈ ; সি দেখিলে ; সি গ'ল ; দেউতাহঁত ; তোমাশাক ; ডাঙ্গৰীয়া ; বাপেকক ; নৈ ; যাওঁতে ; কৰিলত ; কোৱাহেঁতেন ।

6. Name the suffixes commonly used in Assamese to indicate plural number, and state in what sense the singular suffixes টো, ডাল, জনী, খন, চটা are used. Give an example of each of them.

7. State in what sense the তদ্ধিত particle আল, অনি, and ঙ্গা and ক্ৰং particle ওঁতা, অন, আক are used. Give an example of each of them and decline pronoun মই in all cases in both the numbers.

8. Give the respectful forms of সি, ই, তই, adjective forms of ঘৰ, পানী, দান, feminine forms of বাঘ, দাদাই, বৰুৱা, and decline the verbs গা in সম্ভব্য ভূত কাল in all persons.

INDIAN VERNACULARS—HINDI (SUBSIDIARY)

FIFTH PAPER

Examiner:—PANDIT BABUA MISHRA, JYOTISHACHARYYA.

The figures in the margin indicate full marks.

1. Explain fully any two of the following:—

- (a) देखिय नभ मंङ विपुल अंगारा । 24
 अवन न आवत एको तारा ॥
 पावकमय ससि खवत न आगी ।
 मानहु मोहि जानि हत भागी ॥
 सुनहु विनय मम बिटप असीका ।
 सत्य नाम कर हर मम सीका ॥
 नूतन किसलय अनल समाना ।
 देहु अगिनि मम करहु निदाना ॥
 देखि परम बिरहाकुल सीता ।
 सो छन कपिहि कल्प सम बीता ॥
- (b) सांई अपने भात को कबहु' न दीजै वास ।
 पलक दूर नहिं कीजिए सदा पास ॥
 सदा रखिए पास वास कबहु' नहिं दीजै ।
 वास दियो! लंकैस तासु को गति सुनि लीजै ॥
 कह गिरधर कबिराय रामसो मिलियो सांई ।
 पाय विभीषण राज लंकपति बाज्यो सांई ॥
- (c) दूषण देत हैं लोग सुकण्ठ को दीनो बिगारि या आपनो जोटे ।
 अंगद पास ही आयी अचेत निहारि चक्री दशरथ के दोटे ॥
 हाथ करे लखि बाकी दशा लखिरामजी दाखण बान को चोटें ।
 बालि समीप बिहाल के रोय सुतारा परी यहि ऊपर लोटें ॥
- (d) अकृत पात्र कर धरे सयानी,
 फिरीं गाय अहुंसि तब रानी ।
 चरन बन्दि गी-माध विशाला,
 पूज्यो अवध-रानि तेहि काला ॥

मिलन हेत वच्छहि अकुलानी,
 यद्यपि रहौं धेनु गुणखानी ॥
 पूजन काज रोहौं सोइ ठाढ़ी,
 सो लखि प्रीति भूप मन बाढ़ी ॥

2. Please write in simple prose the substance of *any two* of the following : --- 15

(a) मन रे ! परसि हरि के चरन ।
 सुभग सीतल कमल-कीमल, त्रिविध-ज्वाला-हरन ॥
 जे चरन प्रह्लाद परसे, इन्द्र पदवी धरन ॥
 जिन चरन ध्रुव अटल कौन्ही, राखि अपने सरन ॥
 जिन चरन प्रभु परसि लीन्है, तरो गौतम धरन ॥
 जिन चरन घाखी गोवर्धन, गरब मघवा हरन ॥
 दास मीरा लाल गिरिधर, अगम तारन तरन ॥

(b) अति कृतज्ञ हूंगी मैं तेरी
 ऐसा चित्र बना दे तू ।
 दुखित हृदय के भाव हमारे
 उस पर सब दिखलादे तू ॥
 प्रभु की निर्दयता, जीवों की
 कातरता दरसादे तू ॥
 मृत्यु समय के गौरव को भी
 भली भांति भलकादे तू ॥

(c) काम, क्रोध मद लोभ की, जौलौं मन में खान ।
 तौलीं, पंडित मूरखी, तुलसी एक समान ॥
 तौ लागि जीगी जगत'गुरु, जौ लागि रहित निरास ।
 जब आसा मन में अगी, जग गुरु जीगी दास ॥
 दुर्जन दर्शन सम सदा, करि देखौ छिय गौर ।
 सन्मुख की गति और है, विमुख भए पर और ॥

3. Explain *any two* of the following, giving the context and adding notes where necessary :— 16

(a) उसने दाहिनी ओर मुड़ फेरा, देखा कि एक राजपुत्र युवक उसे अनिन्विष नेत्रों से देख रहा है। मन्मथ के सदृश उसका गौर स्वरूप, प्रशस्त ललाट, उज्ज्वल आँखें थीं। उसने मन ही मन विधाता की कारीगरी की प्रशंसा की। पर लज्जा से उसके नेत्र झुंक गए।

(b) न वहाँ कदम कदम पर मन लुभानेवाली या तबियत बिगाड़नेवाली चीज़ें थीं ; न रोशनी थी, न कल-कारखाने, और न चिमनियों का दम-घोटनेवाला कड़वा धुआँ था ; न सड़कों पर कूड़े कचरे के ढेर थे और न गलियाँ बदबू से सड़ती थीं।

(c) इस अबसर पर परम मनीहर नए नए राग वाद्य संयुक्त-गायन होते रहते हैं, जिनके मनमोहन स्वर अपना अपूर्व प्रभाव सब पर डाले बिना रह ही नहीं सकते। सब कार्य शेष हो चुकने पर वे उठ कर एक अंतःपुर में चले जाते हैं और वहाँ भारी वस्त्रालकारों की उत्तारकर तनिक विश्राम करते हैं।

4. Please translate into English *any one* of the following :— 10

(a) पृथ्वी के उत्तरी छोर को उत्तरी ध्रुव कहते हैं। उसके आस-पास जमीन बिल्कुल नहीं है। चारों तरफ समुद्र ही समुद्र है ; पर उसमें प्रायः पानी नहीं ; बहुत करके सर्वत्र जमी हुई बर्फ की राशियाँ ही राशियाँ हैं। यह बर्फ भी सब कहीं एकही अर्थात् सम नहीं। कहीं वह सैकड़ों फुट ऊँची है और कहीं दो ही चार फुट। वहाँ खाद्य पदार्थ का कहीं पता नहीं ; कोई चीज़ उत्पन्न ही नहीं होती। जो लोग भ्रमप्रदेश की यात्रा करने जाते हैं वे खाने-पीने का सारा सामान अपने साथ ले जाते हैं।

(b) कई सौ वर्ष पहले इस देश के प्रायः प्रत्येक प्रान्त में जंगली हिंस्रजीवों का बड़ा आधिक्य था। भेड़िये, रीढ़, आदि की तो बात ही क्या, शेर, बाघ और हाथी तक घने जंगलों में घूमा करते थे और कभी कभी बस्तियों के भीतर तक आकर उत्पात मचाते थे। पर अब यह बात नहीं है। अब तो ऐसे भयानक जीव केवल उन्हीं जगहों में रहते हैं जहाँ घोर जंगल हैं और दूर दूर तक फैले हुए हैं इनकी संख्या भी बहुत ही कम रह गई है। भय है कि इन जीवों का नाश यदि इसी गति से होता रहा तो शायद किसी दिन इनका मूल ही खय हो जायगा।

5. (a) Please give a brief description of Tilak-Yatra or of the village Kālā Kānkar. 10

Or,

Write in your own words the conversation between Hanuman and Sita.

(b) Please write in Hindi (about ten lines) what you know about Dalip or Bibhishan or Nalini Mohan Sanial. 10

6. Please explain the meaning of and illustrate in simple sentences any five of the following :— 15

होड़ करना, मुँह मीड़ना, नाक रगड़ना, लम्बीतानना, चान बान, मुँह देखना,
मन मारना, पाला पड़ना, कान पर जूँ रेंगना, खटार्ई में पड़ना, नज़र लगना ।

SIXTH PAPER

Examiner :—Mr. LALTA PRASAD SUKUL, M.A.

The figures in the margin indicate full marks.

1. (a) Rewrite the following correctly, and give reasons for your corrections :— 8

स्कूल में हम भी सारा भूगोल और खगोल पढ़ा था ।
वो लोग स्वर्ग और नरक की ठेकाना जानने मांगता है ।
बड़े कहे तुमारी घर अच्छी लगती है ।
जींदी कीर्ई मर गया तो डाक्टरबाबू सजा में जाईगा ।
चिन्ता दिल का ऊपर में चढ़ा रहता है ॥

(b) Please write a short letter in Hindi to your friend, congratulating him or her on his or her success in the examination. 7

2. (a) How many cases are there in Hindi? Please illustrate them in simple sentences. 7

(b) When is a बहुवचन used for एकवचन ? Please illustrate. 3

3. (a) Please give the tatsama (Sanskrit) forms of any ten of the following :— 10

पिय ; गाह ; जीभ, आस, धरम, मुकुत ; सांच ; सुरति ; पुत्र ; कोरति ;
आसिष, सजाना, दसनन ।

(b) Please fill up the gaps in the following :— 5

बड़े मूर्ख — मन — बड़ा लज्जित — । पड़ले तो चाहा जान दे — ; पर फिर
सींच — कर धर — निकल विदीपार्जन — परिश्रम — लगा और थोड़े ही दिनी में ऐसा
प्रहित — जिसका नाम आज तक चला — है ।

4. (a) Please translate into Hindi the following passage :-- 8

The lecture was announced for one o'clock, and arriving at that hour, we found the room full of rank and fashion. Excellent accommodation was arranged for the public press. Flowers, some of those cheap but lovely and odorous ones, which form the glory of England's garden, were placed tastefully here and there—on the mantel, on the modest table at which stood the lecturer's chair, and a large and fragrant bouquet in the window-sill.

(b) Please translate any two of the following into English :— 12

(i) वह कौन सी है छाँव खोजता जिसे है रवि,

प्रतिदिन भेज दल अमित किरण का ।

वह कौन सा है गान जिससे लगाए कान

गिरि चुप चाप खड़े ज्ञान भूल तन का ॥

कौन सा संदेश पौन कहता प्रसन्न से है

खिल उठता है मुख जिससे सुमन का ।

कौन से रसिक को रिझाता है सुना के गान

कौन जानता है भेद कायल के मन का ॥

(ii) खौरा सर से काटिप, भरीए नकम लगाय ।

राक्षस करए मुखन की चढ़ियत यही सजाय ॥

जो रहस्य उत्तम प्रकृति, का करि सकत कुसंग ।

चन्दन विष व्यापत नहीं, लपटे रहत भुजंग ॥

ज्यों रहस्य गति दीप की, कुल कपूत गति सोय ।

बारे अजियारी लगै, बर्दे अंधेरी होय ॥

(iii) थीं मेरा आदर्श बालपन से तुम मानिनि राधि ।

तुम सी बन जाने को मैंने व्रतनियमादिक साथे ॥

अपने को माना करती थी मैं हृषभानु-किशोरी ।

भावगगन के कृष्णचन्द्र को थी मैं चतुर चकीरी ॥

था छोटा सा गाँव हमारा, छीटी छीटी गलियाँ ।

गोकुल उसी समझती थी मैं गोपी संग की अलियाँ ॥

कुटियों में रहती थी पर मैं उन्हें मानती कुंजों ।

साधव का सन्देश समझती सुन मधुकर की गुंछें ॥

(iv) सत्यज्ञान की प्राप्ति हेतु निम्न लक्ष्य लगाओ ।

शब्दाङ्गव्यर्थ सदा ही दूर बहाओ ।

सुविचारों का स्रोत अजर है अपने अन्दर,

तो खभाव से शब्द निकलते हैं अति सुन्दर ।

एकरूप है हृदय और यदि सच्ची भाषी

तो शब्दों के लिए भटकना व्यर्थ कहानी ॥

5. Estimate the position of Bihari Lall, Padmakar, and Harish-chandra in Hindi literature. 20

Or,

Please trace the historical development of Ram Kāvya in Hindi poetry. Who was the chief exponent of this school, and what do you know of him?

6. Please write short notes on *any four* of the following:— 20

Surdas, Kabirdas, Gorakhnath, Bhushan, Mira Baie, Lalooji Lall, Chand Bardaie, and Mishra Bandhus.

INDIAN VERNACULARS—MAITHILI (SUBSIDIARY)

FIFTH PAPER.

First Half

Examiner—MR. BRAJAMOHAN THAKUR, M.A., B.L.

Only THREE questions are to be attempted.

All questions carry equal marks.

1. Explain *any two* of the following:—

(a) कयल उपद्रव सभ जनक देखता भले जमाय ।

टेगरा पोठी चाल दै रोडक शीर विसाय ॥

लखण कहल सरोष सुनि भृगुपति मति अति छोटि ।

पर्वत मध्ये ठेकले भाङ्गिच घरक सिलौटि ॥

(b) की दिव्य भूमि मिथिला हम जावि गेलौ'

देखैत मात्र मन लखण द्रष्ट भेलौ' ।

की दिव्य फूल फल वृक्ष अनन्त बाग

पक्षी विलख्य करै बहिर रख गान ॥

- (c) बालहंस कल अवध मनीहर एतै कतै सों आएल ।
 जनकपुरी युवतीक गमन जित मानस व्यथित मुकाएल ॥
 सेह धिकाधि अनु दीवि अवनिजा अवधत छथि सखि संगे ।
 नृपुर धुनि सुनला जाइत अछि बुझला जाइछ रंगे ॥

2. Explain any one in English or Maithili :—

- (a) ससन परस खसु अन्धर दे
 देखल धनि देह ।
 नव जलधर तर संचर दे
 अनि बिजुरी देह ॥
 आज देखल धनि जाइत दे
 मोहि छपजल रंग ।
 कनक लता अनि संचर दे
 महि निर-अवलम्ब ॥
 ता पुन अपरुव देखल दे
 कुच-युग अरविन्द ।
 बिगसित नहि किछु कारन दे
 सोभा मुख चन्द ॥
 विद्यापति कवि गाथील दे
 रस बूझ रसमन्त ।
 देवसिंह नृप नागर दे
 हासिनि देह कान्त ।

- (b) कंटक माझ कुसुम परगास
 बिकल भमर नहि पावय बास ॥
 भमरा भरमे रमए सब ठाम ।
 तुष बिनु मालति नहि बिसराम ॥
 रसमति मालति पुन पुन देखि ।
 पिबए चाह मधु जीव छपेछि ॥
 ओ मधुजीवी तीछें मधुरासि ।
 साँचि घरसि मधु मने न लजासि ॥

अपनहु मन दय बुझु अबगाहि ।

भमर मरत वध लागत काहि ॥

भनहि बिद्यापति तौ पय जीव ।

अधर सुधारस जी पय पीव ॥

3. Describe the principal events of वनपर्व in your own Maithili.

4. Give the meaning of the following :—

वाटहिमे गोहरण केनिहार गणके देखिकेँ उत्तर ओहि सबकेँ ललकारलक, ओहि दलमे कर्षी कल । ओ अर्जुनकेँ देखि भयभीत भय गेल और अपना सैन्यसं अर्जुनक प्रशंसा करै लागल । परन्तु उत्तर गोहारक सैन्यकेँ देखि भयसं कातर भैगेल और अर्जुनकेँ कहे लगलन्ह जे शत्रुक सैन्य बडेँ प्रबल अछि । ई जीतल नहि जा सकेँ अछि । रथ घुमाय ले चलू ।

5. Describe fully the dialogue between Angada and Ravana.

Second Half.

Examiner—PANDIT BABUA MISRA, JYOTISHACHARYYA.

Only THREE questions are to be attempted.

All questions carry equal marks.

1. Translate any one into English :—

(a) ओ सुभद्रबाबू छी निके ? बहुत दिन पर भेंट भेल अछि । कतय यात्रा भेलैक अछि ? हम त अहाँक ओहिठाम जाइत छलहुँ । एकटा अहाँक बहुत जरूरी काज अछि से एतेक लौकिक समझ नहि कहब । कने एम्हर आऊ, हम दूनू गौटे एकाम्नी कय लिअ । शीघ्रता कऊ, हम बड़ हलचल मे की—एक पाहुन आवयलै छथि तनिक आतिथ्य सत्कार करब बहुत आवश्यक । हमर घरक हाल अहाँ जनितहि छी, वैशी कथौलै कह ।

(b) हमरा लोकनिक समाज अत्यन्त प्राचीन अछि । अन्य प्राचीन समाजि जकां अह समाजक प्राचीन कीर्ति गौरवपूर्ण छैक । ओकर श्रुति एखनहुँ वर्तमान अछि । फलस्वरूप आधुनिक विषय सब केँ ई सुद्ध बुझइत अछि—तुच्छ बुझैत अछि । संसारक परिवर्तन केँ ई ओतेक महल नहि दैत अछि जतेक ओकरा देब उचित । कालक्षपी अनन्तप्रवाह अपना संगे गौरव, मर्यादा, कीर्ति सब हुँने बहल जाइत अछि । मैथिल समाज रुपी तरिणी तटस्थ अछि । अगत्या एहि दूनूक व्यवधान अथ चप बढलै जाइत छैक ।

2. Clearly bring out the meaning of the following :—

- (a) साजल संगल रंग समाज
 खराजक लाभ-कथा कल जोखन ।
 केलनि कानन जाय पिताक
 कथाक यथाविधि पालन तोखन ॥
 ने सुख में कल इधे तथा न
 व्यथा दुख में अनिता कल कोखन ।
 मङ्गल-धामक ओ छवि रामक
 आँखिक सीमाहि में अछि ओखन ॥
- (b) मैथिलि ! मिथिलादेश दिस देखु दुखी जन जानि ।
 देवि ! दैवदतपर कृपा करु खरित मन मानि ॥

3. Give in Maithili the substance of the following :—

एहि तरहक लक्ष्य भेद करवाक विद्या ओहिकाल में केवल अर्जुन और कर्ण के अवैकल्ये । अर्जुनहि के उद्देश्य कैक राजा एहन प्रतिज्ञा कैने कलाह । पुरोहितक कथा द्वारा उत्साहित भै अनेक राजकुमार लोकनि लक्ष्यभेद करवामें प्रवृत्त भेलाह । परंच अनिता खप्रह में एकर अन्धास नहि छलन्हि तनिका बुतें एहि तरहक लक्ष्यभेद करवाक यव केवल हास्यास्पद भेलैन्हि, कैक गोटे भावी अप्रतिष्ठाक जरें प्रवृत्ते नहि भेलाह । कर्ण अपनाके दासीपुत्र मानि कै अविय समाज में लक्ष्यभेद करैक निमित्त उठबहुक साहस नहि कैलक । सम्यूर्ध्व सभा निराश्रय भै गेल । तखन राजपुरोहित ठाढ़ भै बाजै लगलाह जे देश शस्त्र-विद्या सौं शून्य बूझि पड़ैअछि ।

4. Translate into Maithili :—

Brethren, we know to our shame, that most of the real evils for which the foreign races abuse the Hindu nation, are only owing to us. We have been the cause of bringing many undeserved calumnies on the head of the other races in India. But glory unto God, we have been fully awoken to it, and with His blessings, we will not only cleanse ourselves, but help the whole of India to attain the ideals preached in the religion eternal.

5. Write in Maithili, a letter to your father, telling him how you have done in your examination.

SIXTH PAPER.

The questions are of equal value.

First Half

Examiner—PANDIT BABUA MISHRA, JYOTISHACHARYYA.

Only THREE questions are to be attempted.

1. Rewrite the following after making necessary corrections :—

पनरह जनवरी सोमदीन बड़का जीरसं भूकम्प भेलाह। घरलोकनि धारासायी भय गेल। कर्षवोदारक शब्द सुनि सोनि कान फाट लागल। जसोन सँ पानीके धारा बह्य लगलाह। लोक सब बडे कष्ट पर अहि। इनारक पानी सुखा गेलथीन्ह। पीबयक हेतु जल नाहीं कतहु पाबि लोग परम दुखा अहि। होमय सकेत अहि जे एहि वर्ष दुर्भिक्ष होथि।

2. Fill up the blanks :—

मिथिलाक—भाग—जनकपुरक—दुर्गापुर एक गाम—। ओहि गाम—
रामेश्वर नामक एक—हलाह; जलिका मादबियोग तँ—भेलैन्ह जे पिताक—से हो
उपस्थित—। अहि—ब्राह्मणक वयस—वर्ष छलैन्ह।

3. Give the feminine forms of the following :—

छोड़ा, समुर, बालक, बतार, राज, कुम्हार, डोम, धोवि, बच्चा।

4. Frame sentences to illustrate the use of any four of the following :—

- (i) चोर चोर मसिधौत भाय।
- (ii) बाभनक गाम में कीरि पजिषाड़।
- (iii) फूक ने फाक टांग बिचारिक ताप।
- (iv) सगर रामायण पढ़लहुँ सीता ककर बहु।
- (v) अकरी नइबा तकरी गीत।
- (vi) पानि में साइ नव नव कुटिया बखरा।
- (vii) रोगी बिचाही बेदक भगोसि।

5. Expound the Samasas and give meanings of any six of the following :—

छोटाछोटी, दूषारि, पनबट, मुहदूबर, चधमक, गौदमुंहा, अनुकप, तीतल-बिलाड़ि।

6. Decline मेना.

Second Half

Examiner—PANDIT BABUA MISRA, JYOTISHACHARYYA.

Only THREE questions are to be attempted.

1. Write notes on any three of the following :—

उमापति, मनवीर, चन्द्रकवि, जीवन भा, हवनाथ ।

2. Compare Maithili with your principal vernacular, stating distinguishing features of both the languages with copious illustrations.

3. “बालचन्द बिज्जावई-भासा,
दुहु नहिं लग्गई दुज्जन-हासा ।
ओ परमेसर हर-सिर सीहई,
ई निश्चय नापर-मन सीहई ॥”

Explain fully the above quotation from the ‘Kirtilata’ of Vidyapati stating with quotations, if possible, why his language is above criticism.

4. Name the language or languages to which Maithili owes its origin, fully criticizing the views of different schools.

5. Who is your favourite poet in Maithili literature and what is he famous for?

INDIAN VERNACULARS—URDU (SUBSIDIARY)

FIFTH PAPER

Examiner—MR. NASIR ALI KHAN CHAUDHURI, M.A.

The questions are of equal value.

ANY SIX questions may be attempted.

1. Translate into English, removing allusions :—

توحید کی امانت سینوں میں ہے ہمارے
آسان نہیں مٹانا نام و نشان ہمارا
اے گلستانِ اندلس وہ دن ہیں یاد تجھ کو
تھا تیری ڈالہوں میں جب آشیل ہمارا

چشتی نے جس زمین میں پیغام حق سنایا
 نانک نے جس چمن میں وحدت کا گیت گایا
 میرا وطن رہی ہے میرا وطن رہی ہے
 گردی میں کھلتی ہیں اوسکی ہزاروں ندیاں
 گلشن ہے جنکے دم سے رشکِ جنان ہمارا
 کچھ بات ہے کہ ہستی مٹی نہیں ہمارا
 صدیوں رہا ہے دشمنِ دورِ زمان ہمارا

2. (a) On what grounds has Iqbal gained popularity as an Urdu poet?

(b) Explain the following expressions:—

میرِ عرب - وحدت کی - جاپان کا حرم - سفینۂ نوح *

3. (a) Reproduce the talk of حمیدہ and فہمیدہ as given in توبۃ النصر.

(b) What was the object of ڈاکٹر نذیر احمد in writing توبۃ النصر and how far has he attained it?

4. (a) Translate into English:—

باپ نے جو یہ اپنی رام کہانی سنائی بیٹے پر اس طرح کی ہیبت چھائی
 کہ چونک پڑا۔ جاگا تو پھر وہی دالان تھا اور وہی تیمارداریوں کا سامان۔
 بی بی پاس بیٹھی ہوئی آہستہ آہستہ پنکھہ چل رہی تھی۔ میاں کی
 آنکھ کھلی ہوئی دیکھ کر اس کی جان میں جان آئی۔ ورنہ جس گھڑی سے
 میاں نے جی برا کیا تھا سہمن کے مارے کا تو نور بدن میں لہر نہیں تھا۔
 نصرح آٹھ بجے ڈاکٹر کی دوا پیکر جو پڑا تھا تو اس وقت کا سو یا سو یا اب
 کہیں دو بجے جاکر ہوشیار ہوا *

(b) Rewrite in your own words:—

آج تو میاں بی بی میں یہ قول و قرار ہوا اگلے دن چھوٹا بیٹا سلیم ابھی سوکر بھی نہیں اٹھا تھا کہ بیدار نے آجگیا کہ صاحبزادے اٹھتے بالاخانے پر میاں بلاتے ہیں سلیم کی عمر اسوقت کچھ کم دس برس کی تھی - سلیم نے جو طلب کی خبر سنی گھبرا کر اٹھ کھڑا ہوا اور جلدی سے ہاتھ منہ دھو ماں سے آکر پوچھنے لگا اماں جان تمکو معلوم ہے کہ ابا جان نے کیوں بلایا ہے - ماں - بھائی مجھکو تو کچھ خبر نہیں - بیٹا - کچھ خفا تو نہیں ہیں - ماں - ابھی تو کتے پر سے بھی نہیں اترے *

5. Explain the following:—

اتنا تو بنادے مجھے اے ناصحِ مشفق

دیکھا ہے کہ اوس ماہ لقا کو نہیں دیکھا

تمام ہو خاک اپنا مطلب کہ یارِ پُر قہر - شوقِ بیتدب
لکھا ہے اک حرفِ آرزو اب سو رہے بھی ہم نے مٹا مٹا کر
مرے کوچے میں وہ کن شخیوں سے جابجا تھہرے
بڑھے بڑھکرتھے - دم بھر چلے - چل کر ذرا تھہرے
داغ کی شامت جو آئی اضطرابِ شوق میں
حالِ دل کم بخت نے سب انکے منہ پر کھدیا
زبان سے کر کیا ہے وعدہ تو نے تو یقین کس کو
نگاہیں صاف کہتی ہیں کہ دیکھو یوں مکتے ہیں

6. Give a life-sketch of داغ. What are the characteristics of his poetry and what form of poetry he likes most?

7. (a) Write a note on مسلسلِ حالی

(b) What conclusion has Hali drawn in his poem مناظرِ راعظ و شاعر؟

8. Put the following into simple prose removing all allusions :—

بچے ہوئے کھشیں سے یان کی رھی ہیں جو تیرے ہو رہے ہیں
 وگر نہ زخموں سے حادثوں کے ہر ایک سینہ فگار دیکھا
 خبر نہیں یہ کہ کیا ہے - کیسا ہے - کون ہے اور تو کہاں ہے
 پہ اپنے میں اور تجھ میں ہم نے علاقہ اک استوار دیکھا
 فرہاد کوھن کی لی تو نے جان شیریں
 اور قیس عامری کو معنوں بنا کے چھوڑا
 داغ و مجروح کو سن لو کہ پھر اس گلشن میں
 نہ سنیگا کوئی بلبل کا ترانہ ہرگز
 بھولی ہوئی ہیں تاریں ہزنوں کی چوکتی سب
 جائیں کدھر کہ ہر سودن لگ رہی ہے بن میں
 ہندو سے لڑیں نہ گبر سے بیر کریں
 شر سے بچیں اور شر کے عوض خیر کریں
 جو کہتے ہیں یہ کہ ہے جہنم دنیا
 وہ آئیں اور اس بہشت کی سیر کریں

9. (a) Describe the character of حسین as depicted in لیلیٰ دمشق۔

(b) Translate into English :—

قاعدے کی بات ہے کہ جب مصیبت کسی پر آتی ہے تو چاروں طرف
 سے اوسکی بربادی کے سامان ہو جاتے ہیں - غریب بد بخت عبد اللہ بن
 سلام کہلئے بھی ہونی شدنی بہت سے اسباب ساتھ لیکر آئی تھیں - جب
 امیر شام کی شہزادی نے دو ٹوک بات کہی تو ابو ہریرہ جیسے کبیر سن
 اصحاب رسول بھی اوس چلمے میں آ گئے *

SIXTH PAPER

Examiner—SIR A. SUHRAWARDY, KT., M.A., PH.D., D.LITT.,
BAR-AT-LAW, M.L.A.

The questions are of equal value.

Answer ANY SIX questions.

1. Give a brief history of Urdu poetry (نظم اردو کی تاریخ)
2. Trace the origin and development of Urdu prose.
3. Determine the position of میر تقی میر in Urdu literature.
4. Estimate the contribution of Hindus to Urdu language and literature.
5. Give the gender of the following words according to the Delhi and Lucknow schools of Urdu :—

بلبل - دہی - تار - قلم -

6. Write philological notes on the following words :—

انہوں - ٹک - نت - میز - نیلام - کمر - کنٹر - استانی - مصالح -
افرائقی - میم - بٹام *

7. Parse :—

رے سخن کسی کی طرف ہو تو رو سیاہ
سودا نہیں جنوں نہیں و حشت نہیں مجھ سے

INDIAN VERNACULARS—ORIYA (SUBSIDIARY)

FIFTH PAPER.

Examiner—MR. MAHESWAR DAS, M.A.

The questions are of equal value.

1. Explain, with reference to the context, *any two* of the following :—

(a) ମୋହର ରସେ ତୁ ରସା,
 ଶସ୍ୟ ଶ୍ୟାମଳ ସୁରସା
 ପଶି ପୁଷ୍ପ ଦଲେ, ହୋଇଲୁ ମଣ୍ଡିତା
 ମୋ ଲଗି ତୋର ସୁଦଶା ।
 ଧରଥୁ ତୋତେ କୋଳେ
 ତହିଁ ତୁ ଥା ସୁଖଭୋଳେ
 ମୋ ପିଅର ବ୍ୟୋମ ଦେଖୁଛନ୍ତି ତୋତେ
 ସୁଧ୍ୟ ଚନ୍ଦ୍ର ବେନି ଭୋଳେ ॥

(b) ହୃଦୟର ସ୍ତରେ ସ୍ତରେ ସଞ୍ଚରଲ୍ଲ କ୍ଷଣେ
 ସେ ସ୍ବର୍ଗ ସଙ୍ଗୀତ ।
 ଭାଜିଲ୍ଲ ବିଷମ ମୋହ ଚିତ୍ତ ନବ ପ୍ରାଣେ
 ହେଲ୍ଲ ତରଙ୍ଗିତ ।
 ନୟନ ଉନ୍ମାଳି ପାତ୍ର ଦେଖେ ଆଚମ୍ବିତ
 ଅପୂର୍ବ ଦର୍ଶନ
 ନାହିଁ ସେ ଅକାର ଘୋର ବଲ୍ଲୁପ୍ର ଚକତେ
 ସେ ଭୈରବ ବନ ॥

(c) ଅବସ୍ଥା ବିରୁଦ୍ଧରେ ସଂଗ୍ରାମ କରି ମନୁଷ୍ୟ ଜୟଲ୍ଲଭ କରି ପାରେ
 କିନ୍ତୁ କାଳର ପ୍ରତିକୂଳତାଚରଣ କଲେ ତାହାକୁ ନିଷ୍ପତ୍ତ ବିଫଳିତ
 ହେବାକୁ ହେବ । ଏହାର ନିର୍ଦ୍ଦିଷ୍ଟ ପଥ ପରିତ୍ୟାଗ କଲେ ବା ସୀମା
 ଲଘନ କଲେ ଅମୃତମାନଙ୍କର ନିସ୍ତାର ନାହିଁ ।

2. Translate the following extract into Oriya :—

Once upon a time there lived a king named Nala. One day, as he was walking in the beautiful garden of his palace, he saw a number of golden geese feeding near a pond and he was so pleased with their appearance that he determined to go out and catch one.

3. Translate into English :—

ଅମ୍ବୁମାନଙ୍କ ଦେଶରେ ପୂର୍ବକାଳରେ ନାୟଶିକ୍ଷା ପ୍ରଚଳିତ ଥିଲା ।
ଏ ବିଷୟରେ ଭୂର ଭୂର ପ୍ରମାଣ ଅଛି, କିନ୍ତୁ ଅଜିକାଲି ଅନେକ ଏକ-
ଦେଶଦର୍ଶୀ ସ୍ଵାର୍ଥୀଙ୍କ ବ୍ୟକ୍ତି ଶୁଣିକ୍ଷାର ଭୟାନକ ପ୍ରତିରୁଦ୍ଧତାଭରଣ କରି
ଦେଶର ଘୋର ଅନିଷ୍ଟ ସାଧନ କରୁଅଛନ୍ତି—ଶିକ୍ଷିତା ରମଣୀଙ୍କୁ ନାନା-
ପ୍ରକାର ଉପହାସ ବିଦ୍ରୁପ କରୁଅଛନ୍ତି—ଅକାରଣରେ କେତେ ଅପବାଦ
ଦେଉଛନ୍ତି । ଅବିବେକିତାହେତୁରୁ କୌଣସିଠାରେ ଯେ ଶିକ୍ଷା-ଗିତାଟି
ଘଟି ନାହିଁ ବା ଘଟିବ ନାହିଁ, ଅମ୍ବୁମାନେ ଏହା କହୁ ନାହିଁ ।

4. Expand the idea contained in *one* of the following :—

(i) ଭଲସୀ ଭୁଲ ପକ୍ଷରୁ ବାସେ ।

(ii) ଧୀର ପାଣି ପଥର କାଟେ ।

(b) Give the colloquial Oriya equivalents of *any five* of the following :—
Legs ; cats ; dirt ; carts ; umbrella ; cloth ; rags ; shoes.

5. Give in simple Oriya the summary of the ideas contained in the poem ଅଶା or any other poem of Madhusudan Rao.

SIXTH PAPER

Examiner—MR. BINAY K. MISRA.

The questions in each group are of equal value.

1. Write a note on the Chautisā form.

Or,

Estimate the literary value of the Bidagdha-Chintāmaṇi.

2. Give the subject-matter of the Kīśora-chandrānānāchampū.

3. Write notes on the lives of *any three* of the following poets :—

Jagannāth Dās, Janārdan Dās, Bhīmā Bhoi, Rādhānāth Rai, and
Dinakṛṣṇā Dās.

4. (i) Conjugate the Oriya ଶ୍ରୀ ଧାତୁ in past tense.
(ii) Decline ଶ୍ରୀ in all cases. .

5. Frame sentences using the feminine forms of *any four* of the following words :—

ଗୁଡ଼ିଆ, ଚରୁଡ଼ି, ହଳିଆ, ଭୁଞ୍ଜିତା, ଭୁଞ୍ଜିତା, ଭୁଞ୍ଜିତା and ଶୁଣିତା ।

6. Show *three* phonetic peculiarities of the Oriya Language. Give examples.

INDIAN VERNACULARS—(BASIC LANGUAGES) (Pali)

SEVENTH PAPER

Eraminer—MR. SAILENDRANATH MITRA, M.A.

The figures in the margin indicate full marks.

Either,

Discuss the relation of Pali to Māgadhī and Śaurasenī.

Or,

In what respects does Pali differ from Sanskrit? Give illustrations in support of your answer.

2. Translate into English or your own Vernacular *any three* of the following extracts, adding philological notes on the words italicized :—
12+6=18.

(a) Bodhisatto avidūre ekam udumbaram pakkaphalapinḍisampannam dassento 'pass' etāni *amhūkam* hadayāni ekasmiṃ udumbare olambanti' ti.—
'Sace me hadayaṃ *dassasi* ahaṃ taṃ na mārossāmi' ti—'Tena hi ettha nehi maṃ, ahaṃ te *rukke* olambantaṃ *dassāmi*' ti.

(b) So kira saddho pasanno *ariyasāvako* okadivasam Jetavanam gacchanto sāyaṃ Aciravatitīraṃ gantvā nāvike nāvam tīre ṭhapetvā dhammasavanatthāya gate tithe nāvam *adivā* Buddhārammaṇam pītiṃ gahetvā nadim *otari*. Pādā udakamhi na osidimsu.

(c) Esa muñjaṃ parihare, *dhiratthu* idha jīvitaṃ |
saṅgāme me *matam seyyo* yaṇi ce jīve parājito ||
Paḍāḥā *ettha* dissanti eke samaṇabrāhmaṇā |
taṇ ca maggaṃ na jānanti yena gacchanti subbatā ||

(d) Andhakamakasaṃ na vijjare, kacche rūḥhatipe caranti gāvo |
vulḥim pi saheyyum āgataṃ, aha ce *patthayasī* pavassa deva ||
Nāhaṃ bhatako 'smi kassaci, *nibbiḥhena* carāmi sabbaloke |
attho bhatiyā na vijjati, aha ce *patthayasī* pavassa deva ||

(e) Alaṃ etehi *ambehi* jambūhi panasehi ca |
yāni pāraṃ samuddassa, varaṃ *mayhaṃ* udumbaro ||
Mahatī vata te *bondī*, na ca paññā tadūpikā |
sumsumāra, vañceto si, gaccha *dāmi* yathāsukhaṃ ||

8. (i) Discuss *any four* of the following :—

8

Locative in *-smi, -mhi* in the Noun declension ; Dative in *-ssa* ; Present Participle in *-nta* and its parallel in the vernaculars ; representation of the *visarjanīya* in Pali ; formation of the Desiderative verb ; importance of double forms, such as *ariya* side by side with *ayya*.

(ii) Show, according to Nāgasena, that condition determines Nāmarūpa. 6

(iii) Comment on *any six* of the following forms, suggesting parallels, if any, from the Vernaculars :— 6

māḷa, pacchima, kiṇṭvā, seyyā, kaṇṇa, deva (as used in the Dhaniya Sutta), *uḷu, heḷḷā, kaccha, and micchā*.

(Prakrit)

SEVENTH PAPER

Examiners— { Mr. BASANTAKUMAR CHATTERJI, M.A.
,, HARGOBIND DASSETH.

The figures in the margin indicate full marks.

1. Attempt *any two* of the following :—

(a) How is the ङ (ङ -vowel of Old Indo-Aryan (Sanskrit) represented in Prakṛta ? Illustrate your answer with suitable examples. 15

(b) Name the more important literary Prakrits, and give the principal peculiarities of Māgadhī with illustrations. 15

(c) How has the word 'Prakṛta' been derived by different Indian grammarians ? What are the various uses of the word 'Prakṛta' ? 15

(d) Write notes on *any ten* of the following words, giving the Sanskrit and Vernacular forms in each case :— 15

पल्लि, भरही, गम्भिणी, कङ्, मदी, लङ्गो, वसही, सोलह, रङ्गी, चङ्गी, खम्भी, केवङ्गी, गङ्गी, कङ्की, वेवम्भी, चप्पा, सङ्गा, वेङ्गी, वङ्गही, and फलिही ।

2. Attempt *either* Group A *or* Group B :—

A.

(a) राजा—देवि दन्तिषावहणरि'दचंदिषी वड्ढावीणसि इमिषा वसंतारंमिच । जदी ।

विषीइ वड्ढलं च देति मचचं षी गंधतेज्जाविण

वेवीषी विरच'ति देति च तदा च'गणि कुप्पासच' ।

जं बाला मुड्ढुंकुमप्पि चये-वड्ढ'ति डिज्जाचर ।

तं मये सिसिरं विणिज्जिच बला पपी वसंतूचपी ॥

(b) विदूषकः—आ दासीए पुनि टेटाकराले कीससचवट्टि रक्खालीइचि एब्बं मं भणसि ।
ता मइ मइवन्हणस्स भणिदेण तं तुमं लहसुं जं फग्गुणसमए सोइंजथी जणादी लहदि । जं
पामराहिंती बइल्लो लहदि ।

(c) विदूषकः— देव एदं परमरथं विचकीचदि ।

जिअा दिइो तरलधवला कज्जलं तोष जीअं

ज। विअिअत्थणकलसिणी रेहए तीअ हारी ।

चक्काआरि रमणफलए कीवि कंचीमरइो

जिअा तिरसा उणवि भणिमी भूसअं दूसअं अ ॥

(i) Translate *one* of the above extracts as literally as you can into English. 5

(ii) Point out and explain the देख्य words used in the above extracts. 5

(iii) Account for the case-endings in वेणुआ in (a), पामराहिंती in (b) and तीअ in (c). 3

(iv) Give the alternative forms of वडढावीअसी in (a), जणादी in (b), and जिअा and भणिमी in (c). 4

(v) Derive विणिज्जिअ in (a) मइवन्हणस्स in (b), and विचकीचदि in (c). 3

B.

(a) राजा —

अणिपंककहाणया सिविणए मं केलिसज्जागदं

कंदीइेण तडित्ति ताडिदुमणा इत्थंतरे संठिदा ।

ता कोडिण मए वि भत्ति धरिदा ढिल्लं वरिल्लं चले

तं मोरूअ गदं अ तीअ सहसा ण्हा अ णिहा वि मे ॥

(b) विदूषकः— सुदं पिअवअअेण । भरिआ कआ पौजस-गंडूसीहिं । ता किं अज्जवि
उवेक्कीअदि अणअम्मिण किलिअंती मुणालिआ, गाढकड्ढणदुअइेण सलिलिण सिंविअंती केलि-
अं कुमत्थली. क्खआसिअमीणिआअं भडित्ति फुडंती एक्कावलिआ, गंठिवअकेआलिआ लुंठिअं तो
गंधहरिणीण ।

(i) Reproduce (a) preferably in English or Bengali. 5

(ii) Explain (b) in your own vernacular. 4

(iii) Point out and explain the देख्य words used in (a). 4

(iv) Give the vernacular forms of the words used in (b). 4

(v) Derive भत्ति in (a) and उवेक्कीअदि and क्खआसिअ in (b). 3

(Persian.)

SEVENTH PAPER

Examiners— { Mr. NASIR ALI KHAN CHAUDHURI, M.A.,
Khan Bahadur Md. AGA KAZIM SHIRAZI.

1. Translate any six of the following into English :—

12

- (1) ای پدر فرمانت را طاعت دارم *
- (2) یکی را دیدم که پانی نداشت *
- (3) هارون الرشید ارکان دولت را بخواند و گفت *
- (4) بچه آهرا را زنده گرفتار نمود *
- (5) شاخه درخت گرفته پشه و مگس را دور میکرد *
- (6) این کشتی هم آهن پوش است *
- (7) در باغ جلو عمارت مشق کردند *
- (8) پدرش سلطان حیدر در جنگ با شیروان شاه کشته شد *
- (9) آثار بزرگی از صورتش ظاهر بود *
- (10) یکی از بناهای ناصر الدین شاه میباشد *
- (11) زیرا عین الدوله نمیکذاشت که کسی این مطلب را بعرض شاه
رساند *
- (12) درین موقع امپراطرس بمرد *

2. Give six such Persian words as are commonly used in Bengali (or in your Vernacular), noticing any change in pronunciation or meaning. 9

3. (a) How is gender distinguished in Persian? Give the opposite genders of **برادر - دختر - مرد - اسب**. 6

(b) How many kinds of Personal Pronouns are there in Persian? Give examples. 5

4. (a) Express in words the following cardinals:—3, 11, 12, 17, 19, 30, 45, 70. 4

(b) How is ordinal formed? Give examples. 2

5. Translate *any six* of the following in Persian :—

12

- (1) He saw a nice garden.
- (2) He is a poor boy.
- (3) Who is this woman?
- (4) A slave fled from his master.
- (5) Why did you run in the sun?
- (6) Why do you weep?
- (7) Who has drawn this picture?
- (8) He is sleeping in his house.
- (9) This cow is black.
- (10) A beggar saw a king and said to him.
- (11) Has she got brothers and sisters in India?
- (12) A horseman went to the city of Calcutta.

INDIAN VERNACULARS—BENGALI

EIGHTH PAPER

Examiners— { Dr. SUNITIKUMAR CHATTERJEE, M.A., D.LITT.,
Mr. SUKUMAR SEN, M.A.

The questions are of equal value.

Attempt ANY FIVE of the following questions.

1. Write short notes on *any five* of the following terms :—
Epenthesis, Umlaut, Vowel Harmony, Syncope, Spirantization, Spontaneous Cerebralization, Glides, Avahatṭha, Brajabuli.
2. Discuss fully Grierson's theory of Inner and Outer Aryan.
3. Enumerate the principal dialects of New Bengali, and state their individual characteristics.
4. Discuss the history of vowels in contact.

Or,

Write a brief essay on the treatment of nasals.

5. Trace back the history of *any eight* of the following New Bengali words :—

দেবখো (lamp stand), গুঁই (a surname), কই (a fish), সং-মা, লাউ, সাঙতাল, পড়শী, ভিতর, সেয়ান, আই (grandmother), সাঁজারু, বেড়, লা (lac), নাতি (grandson), আউষ (early paddy), আঁশ (fibre).

Or,

- Trace down the history of *any eight* of the following Old Indo-Aryan words right up to the *tadbhava* form existing in New Bengali :—

simha, nimantra, rathya, upavita, kakṣa, indrāvāsa, jatugṛha, évaśru, grīṣma, karmadhāra, rju, caluṣka.

6. Write a note on the history of the Locative and Instrumental affixes in Bengali.

7. Classify the tenses in New Bengali, adding a note on their origin and development.

Or,

Discuss in full the Passive Voice in Bengali.

8. Write morphological or syntactical notes on the underlined words in any four of the following passages :—

- (a) এহা শুণী বড়ায়িক চড়ে মাইল রোষে ।
বাসলী শিরে বন্দী গাইল চণ্ডীদাসে ॥
- (b) মদে মস্ত ভাই তুমি তোমার ধোগ্য নহে ।
সত্যভামা লয় যদি তোমাকে ছাড়হে ॥
- (c) দেখিল পাকিল বেল গাছের উপরে ।
আরতিল কাক তাক ভুখিতৈ না পারে ॥
- (d) দুই ভাইকের পবন হৈঞা গেল সখা ।
সভার চরণ-কুপা গুরু উপাধ্যায়ী ।
তঁার বাণী শিখা তারে বহত নাচাই ॥
শিখ্যার শ্রম দেখি গুরু নাচাই রাখিল ।
আপনে না সরে বাণী বসিয়া রহিল ॥
- (f) না দেখিয়ে নয়নে না শুনিয়ে শ্রবণে
তবু লিখি এ বড় বিশ্বয় ।
- (g) যে লাগি কহিতে ভয় সে যদি না জানে ।
ইহা বই কিবা স্বপ্ন আছে ত্রিভুবনে ।

INDIAN VERNACULARS—HINDI

EIGHTH PAPER

Examiners— { PANDIT VIDHUSEKHAR SASTRI
Mr. DHIRENDRA VARMA.

The questions are of equal value.

Answer ANY FIVE questions.

1. Discuss the difference between the Eastern and Western Hindi, with special reference to (a) postpositions, (b) personal pronouns, and (c) past tense of auxiliary verbs.

2. Explain historically the modification to indicate feminine gender of the Hindi verb in the past tense both in transitive and intransitive.

3. Explain for the absence of compensatory lengthening in Hindi forms like 'सच', 'कल', 'सब' (as against सच, कल, and सब). Under what conditions there is normal weakening of a long vowel in Hindi?

4. What is the difference between a radical and a participial tense? What are the chief radical tenses in Hindi? Trace their origin.

5. Write a note on the foreign loan-words in Hindi, discussing, (a) the sources, (b) the nature, and (c) the principles of phonetic changes involved in such words.

6. What are the main points of linguistic difference between Hindi and Bihari? Explain clearly the position of Bhojpuria in Bihari.

7. Trace the development of the Hindi forms for the cardinal numbers up to *eleven*. In what respects has this development been abnormal so far as Hindi is concerned?

8. Write brief linguistic notes on *any ten* of the following :—

मंजन, बादल, गहरा, बत्तीस, उनसठ, फूल, महुआ, मिट्टी, केवट, भाप, चीन्हा, कम-१, मिस्त्री, चंगेज, घासलेट, दलिल पठान, उजबक, टिकस ।

9. What do you understand by the morphological classification of languages? To which type does Hindi belong according to this type of classification? Give examples in support of your answer.

10. Discuss the claims of Hindi to be the national language of United States of India. Would you propose any simplification of Hindi? If so, along what lines?

HISTORY

FIRST PAPER

The questions are of equal value.

Answer ANY THREE questions from EACH half.

Examiner—PROF. SURENDRANITH SEN, M.A., PH.D., D.LITT.

First Half

1. What circumstances so rapidly furthered the cause of parliamentary reform in England after 1827? Discuss fully the results of the Reform Act of 1832.

2. Why has Palmerston been regarded as the heir to the tradition of Canning?

3. Fully discuss the revolution in British colonial policy which was effected in the twenty years following 1830.

4. Give a survey of the Liberal party's rule from 1830 to 1841, indicating the services they rendered to England.

5. 'Peel was never a whole-hearted protectionist.' Discuss the statement, and show how his mind gradually progressed towards the repeal of the Corn Laws.

Second Half

Examiner—DR. A. P. DASGUPTA, M.A., PH.D.

Answer ANY THREE questions.

1. 'Gladstone's supreme gifts lay in finance.' Amplify.

2. Explain the idea of Tory democracy. To what extent was Disraeli able to give practical application to it?

3. Form an estimate of Parnell's place in Irish history.

4. Discuss the progress of Socialism in England between 1880 and 1900.

5. 'The new imperialism did not increase the love of foreign nations for England, and in the last twenty years of the century there was no single friend on whom she could rely.' Elucidate the above remark, and with reference to it discuss the foreign policy of Lord Salisbury.

SECOND PAPER

The questions are of equal value.

Only THREE questions to be attempted from EACH half.

First Half

Examiner—DR. H. C. RAYCHAUDHURI, M.A., PH.D.

1. Comment on *any two* of the following passages :—

(a) 'That the Pradyota of the Purāṇas and the Pradyota of Ujjain were one and the same person does not admit of question.'

(b) 'We cannot accept the Purāṇic statement that Siśunāga was the progenitor of Bimbisāra's family.'

(c) 'Unfortunately it has so far been impossible to fit the Greek description of Aornos to any rocky height noted in the country (India) to-day.'

(d) 'It is more than two years and a half that I am a lay-worshipper. I did not exert myself strenuously for one year ; but, indeed, more than one year that I have lived with the Saṅgha, I have exerted myself strenuously. During this period, however, men who were unmixed, were caused to be mixed, with gods throughout Jambudvīpa.'

(e) 'Whoever breaks the Saṅgha, be he a monk or a nun, shall be clad in white raiment and compelled to live in what is not a residence.'

2. Discuss the epigraphic and literary evidence regarding the extent of Aśoka's dominions and the emperor's relations with foreign potentates.

3. Give a critical account of the chronology of the Śaka kings of North-West India. Discuss in this connection the identity of the founder of the Vikrama era.

4. Write a short history of the Deccan on the dissolution of the Maurya empire, with special reference to the career of Khāravela. Compare Khāravela and Gautamiputra Śātakaṃi as conquerors and empire-builders.

5. Examine critically *any one* of the following statements :—

(a) 'In the north, Samudra Gupta played the part of a *divijayi* of the early Magadhan type. But in the south he followed the ideal of a *dharmavijayi*.'

(b) 'The reign of Skanda Gupta ended about A.D. 467. When he passed away the empire did not wholly perish.'

6. Write short notes on *any four* of the following :—

(a) Yaśovarman, the patron of Bhavabhūti.

(b) Bhoja who assumed the title of *Ādi Varāha*.

(c) Pulakeśin II.

(d) The long-lived Balharā of the merchant Sulaiman.

(e) The Pallavas of Kāñchī.

(f) Sasāṅka, king of Gauḍa.

Second Half

Examiner—DR. RAMESCHANDRA MAJUMDER, M.A., PH.D.

7. Examine the different views about the character of the Hindu kingship, with special reference to the following dicta :—

(a) 'What superciliousness is thine, O king, who art a (mere) servant of the body politic ?'

(b) 'The *Rājanya* is most manifestly of Prajāpati : hence, while being one, he rules over many.'

8. Point out the importance of the *Mahāmātras* in the Mauryan polity, and write a critical note on the administration of justice in Maurya India.

9. What light is thrown by the *Periplus of the Erythraean Sea* and contemporary inscriptions on the economic, social, and religious condition of the Deccan under the Sātavāhanas ?

10. What does Megasthenes say about the condition of the peasantry in Maurya India ? How does his account of the condition of the common people and the administration of the criminal law compare with that of Fa Hien ?

11. Write a short essay on the evolution of caste in Ancient India from the data supplied by (a) the early Buddhist texts, (b) the fragments of the *Indika* of Megasthenes, and (c) the code of Manu.

12. Write notes on *any four* of the following :—

(a) The political constitution of Patala (Indus Delta) in the days of Alexander.

(b) *Nigama-sāhās*.

(c) *Anusāṅgyāna*.

(d) *Uparika Mahārūjas*.

(e) The quinquennial assembly at Prayāga, A.D. 643.

(f) The Madura Academy.

THIRD PAPER

The questions are of equal value.

THREE questions to be attempted from EACH half.

First Half

Examiner—MR. INDUBHUSAN BANERJEE, M.A.

1. Comment on *any three* of the following :—

(a) 'I gave to the beggar,
I nourished the orphan;
I admitted the insignificant,
As well as him who was of great account.
But he who ate my food made insurrection;
He to whom I gave my hand, aroused fear therein.'

(b) 'He shall bring cooling to the flame. Men shall say, "he is the shepherd of all the people; there is no evil in his heart. Verily he shall smite evil when he raises his arm against it". Where is he this day? Doth he sleep among you?'

(c) 'And when they had got our rulers under their power, they afterward savagely burnt down our cities and demolished the temples of the gods, and used all the inhabitants in a most hostile manner, for they slew some and led the children and wives of others into slavery.'

(d) 'The king himself, he led the way of his army, mighty at its head like a flame of fire, the king who wrought with his sword. He went forth, none like him, slaying the barbarians, smiting Retenu, bringing their princes as living captives, their chariots wrought with gold, bound to their horses.'

(e) 'My lord, Tunip, thy servant, speaks saying: "who formerly could have plundered Tunip without being plundered by Manakhbiria"?'

(f) 'To the scribe of my lord, the king, Abdkhiba thy servant. Bring these words plainly before my lord the king: "The whole land of our lord, the king, is going to ruin".'

2. Review critically the main sources of Egyptian history and attempt, in that connection, an estimate of the work of Manetho.

3. Compare the administrative organization of the IVth dynasty with that of the XIIth. To what extent are the differences to be attributed to the anarchy and disorder of the Early Intermediate Period?

4. 'No nation ever stood in direr need of a strong and practical ruler than did Egypt at the death of Amenhotep III.'
Explain and comment.

5. Indicate the main stages in the growth of the power of the priesthood of Amon till Hrihor's accession to the throne of the Pharaohs. How far is Breasted correct in saying that the power of the priest was rooted in the imperial system of the XVIIIth dynasty?

6. Discuss *any two* of the following:—

(a) Pessimism in literature during the Early Intermediate Period.

(b) Osirianization of the hereafter.

(c) The relation of Amenhotep III to the Aton movement.

Second Half

Examiner—DR. P. N. BANERJEE, M.A., B.L., BAR-AT-LAW.

1. Comment on *any two* of the following:—

(a) 'What confidence is this wherein thou trustest? Now on whom dost thou trust, that thou rebellest against me? Now behold thou trustest upon this staff of this bruised reed, even upon Egypt, on which if a man lean it will go into his hand and pierce it.'

(b) 'The kings came and fought;
Then fought the kings of Canaan
In Taanach by the waters of Megiddo.'

(c) 'By the town of Khalule, on the bank of the Tigris, the Elamite forces set themselves in order against me and clashed their weapons together.'

2. 'If Hammurabi was great in war, he was still greater in peace.' (Hall.) Explain. What light does his code throw on (i) administration of justice, (ii) social organization in Babylonia?

3. 'The Babylonian mind as disclosed in the penitential psalms merely realizes materialistic continuation of consciousness after death—sometimes under most depressing conditions.' (Jastrow.) Discuss.

4. Discuss our principal sources of knowledge for the reigns of (i) Sennacherib, (ii) Shalmaneser III.

5. Describe fully Ashurbanipal's policy towards (i) Egypt, (ii) Babylon and Elam, (iii) the barbarians. How far was he responsible for the collapse of Assyria?

6. Give an account of the Iranian religion.

Or,

Assess the importance of the contribution made to civilization by the 'Prophets'.

FOURTH PAPER

The questions are of equal value.

Answer ANY THREE questions from EACH half.

First Half

Examiner—MR. K. ZACHARIA, M.A.

1. Comment on any four of the following passages:—

- (a) In the case of those who have been arrested through the afore-said oath of this assize, no one shall have court, or judgment, or chattels, except the lord king (Assize of Clarendon.)
- (b) This year each one shall give in alms a tenth of his revenues and movables. (Ordinance of the Saladin Tithe.)
- (c) And the City of London shall have all its ancient liberties and free customs. (Magna Carta.)
- (d) It is commanded that every man have in his house harness for to keep the peace after the ancient assize. (Statute of Winchester.)
- (e) We do ordain that the King shall hold a parliament once in the year, or twice, if need be. (Ordinances of 1311.)
- (f) Whereas divers opinions have been before this time what case should be adjudged treason, and what not. (Statute of Treasons, 1352.)
- (g) Whereas the elections of knights of shires chosen to come to the parliaments of the king have now of late been made by very great and excessive number of people. (Statute of 1429.)

2. Sketch in clear outline, the rise and growth of the Exchequer up to 1200 A.D.

3. In what respects did Magna Carta represent an advance on earlier charters?

4. 'The change from the individual to the common petition was fundamental.' Explain this with reference to the early history of Parliament.

5. Explain clearly the place and significance of (1) the jury, (2) writs, in the judicial system of the 12th century.

6. Is it correct to regard the period of the earlier Lancastrians as a time of constitutional development and parliamentary supremacy?

Second Half

Examiner—MR. TRIPURA CHAKRABARTI, M.A.

1. Comment on any four of the following passages :—

(a) Our Sovereign Lord the King, by the advice . . . hath ordained, established, and enacted that all his statutes and ordinances before this time made against such as make unlawful retainers, and such as be so retained, or that give or receive livery, be plainly observed and kept and put in due execution. (*Statute of Liveries*, 1504.)

(b) Be it therefore enacted . . . that always the King for the time being, with the advice of his honourable Council . . . may set forth at all times by authority of this Act his proclamations . . . And that those same shall be obeyed, observed, and kept as though they were made by Act of Parliament for the time in them limited. (*Statute of Proclamations*, 1539.)

(c) That the discussing and adjudging of this and such like differences only belonged to the said House. (*Resolution on the Norfolk Election case*, 1586.)

(d) First, that our privileges and liberties are our right and due inheritance, no less than our very lands and goods. (*Apology of the House of Commons*, 1604.)

(e) We have looked upon that precedent that was mentioned by Mr. Attorney—the resolution of all the judges of England in 34 Eliz. (*Lord Chief Justice Hyde's Judgment in the case of the Fire Knights*, 1627.)

(f) That the pretended power of dispensing with laws or the execution of laws by regal authority as it hath been assumed and exercised of late is illegal. (*Bill of Rights*.)

(g) That no person who has an office or place of profit under the King . . . shall be capable of serving as a member of the House of Commons. (*Act of Settlement*.)

(h) Whereas doubts have arisen on the trial of an indictment or information for the making or publishing any libel, . . . it be competent to the jury impanelled to try the same to give their verdict upon the whole matter in issue. . . . (*Fox's Libel Act*, 1792.)

2. Explain the constitutional position and functions of the Tudor Council.

3. Describe and discuss the attempt of Sir Edward Coke to establish the Bench as an independent authority arbitrating between the Crown and the subject.

4. 'The Stuarts would have done better to rely more on precedent and dwell less on prerogative.' Discuss this with special reference either to Bates's case or to the Ship Money case.

5. 'The fundamental privileges of the subject were less invaded, the prerogative swerved into fewer excesses, during the reign of Charles II, than in any former period of equal length.' Criticize this judgment on the constitutional history of the reign of Charles II.

6. How far was the growth of Cabinet government interrupted between 1760 and 1784?

FIFTH PAPER

The questions are of equal value.

Answer ANY THREE questions from EACH half.

First Half

Examiner—MR. SATISCHANDRA CHAKRABARTI, M.A.

1. Discuss the sources of International Law with special reference to the writings of jurists and law-making treaties.

2. To what extent can a State claim criminal jurisdiction over foreigners—

- (a) for offences committed within the State;
- (b) for offences committed abroad?

3. 'The League of Nations, then, is an anomalous international person.'—*Sui generis*, something not to be likened to anything else.' Discuss.

4. Discuss the present international outlook as regards war. Do you favour the abolition of war altogether?

5. Write critical notes on any three of the following:—

- (a) client States.
- (b) Domiciled aliens.
- (c) piracy in International Law.
- (d) law of extradition.
- (e) the Status of Egypt.
- (f) the Monroe Doctrine.

Second Half

Examiner—DR. NARAYANCHANDRA BANERJEE, M.A., PH.D.

Answer ANY THREE questions from this half.

1. Discuss the rules of International Law relating to aerial bombardment. Do existing rules afford adequate protection against bombardment to the civil population?

2. Examine the effect of the Covenant of the League of Nations on the traditional conception of Neutrality.

3. How is the enemy character of persons determined in times of war? Discuss this question with special reference to belligerent practice during the last Great War.

4. Distinguish between absolute contraband and conditional contraband. What is the penalty for the carriage of contraband?

5. State the facts of and annotate *any two* of the following cases:—

- (1) *The Caroline*.
- (2) *West Rand Central Gold Mining Company v. The King*.
- (3) *The Dacia*.
- (4) *The Knight Commander*.

(History of Islam)

SIXTH PAPER

The questions are of equal value.

Answer ANY THREE questions from EACH half.

First Half

Examiner MR. A. F. M. ABDUL KADIR, M.A.

1. Describe fully the conquest of Mecca by the Prophet of Islam, illustrating your answer with an outline-map of the town, and discuss its influence on the future history of Islam.

2. Give the main causes of the attack of the Arabs on Persia, and give a short sketch of the history of its conquest by them.

3. Describe briefly the character of Abdullah b. Zubayr, and discuss the causes of his failure as a Caliph.

4. Describe the conquest of Africa by the Muslims, and discuss its influence on the history of Islam in Europe.

5. Write short historical notes on *any three* of the following: -

- (1) Abū 'Ubayda b. al-Jarrāh, (2) 'Amr b. al-'Ās, (3) Hajjāj b. Yūsuf (4) Al-Mukhtār, the son of Abū 'Ubayd, (5) Sa'd b. Abi Waqqās.

Second Half

Examiner—PROF. M. Z. SIDDIQI, M.A., PH.D.

1. Discuss fully the chief causes of the fall of the Umayyad dynasty.

2. Give a brief sketch of the life and character of al-Hārūn. Did he cause the dismemberment of his empire?

3. Describe briefly the career of 'Abdu'l-Rahmán I of Spain, and discuss the causes which contributed to his success in establishing his power.

4. Give a brief sketch of the rise and fall of the Tulunide dynasty in Egypt.

Write short historical notes on *any three* of the following :—

- (1) Abú Muslim of Khurásán;
- (2) Ya'qúb b. Layth;
- (3) The Mutazilas;
- (4) The Kharijites;
- (5) The Muravides.

5. Describe the rival policies of Faql b. Sahl and Faql b. Rabi during the caliphate of Al-Amin and Al-Mamun, and estimate their influence on the history of Islam in Asia.

SEVENTH PAPER

The questions are of equal value.

THREE questions only are to be answered from EACH half.

First Half

Examiner—MR. K. D. BANERJEE, M.A.

1 'His successes, like those of his contemporary, Tarik, in Spain, were as much attributable to his temper and policy, as to his courage and strategy.' Discuss this remark about Muhammad, son of Kasim.

2. 'Mahmud of Ghazni was a great leader of men, a just and upright ruler according to his lights, a patron of letters, and deserves to be ranked among the greatest kings of the world.' Illustrate.

3. 'Muhammad Bin Sam proceeded by a series of operations differing entirely from Mahmud's raids to the conquest of further territories in India.' Give an account.

4. 'The rule of the Slave Kings over their Hindu subjects, though disfigured by some intolerance and by gross cruelty to the disaffected, was as just and humane as that of the Norman kings in England and far more tolerant than that of Philip II in Spain and the Netherlands.' Do you agree?

5. 'Alauddin's power, having reached its zenith, began to decline.' Give the story of his later years, and account for his failure.

Second Half

Examiner—MR. D. M. SEN, M.A.

1. Explain the difficulties which the Moghuls had to overcome to found an empire in India.

2. To what extent was the credit due to Akbar for the efficient and liberal administration of his empire?
 3. Make a comparative estimate of the historical value of the writings of Indian historians and foreign ambassadors during the Moghul period.
 4. Describe Indian generalship and mode of fighting as illustrated in the first battle of Panipat and the battle of Fatehpur Sikri.
 5. Review the contributory causes which led to the ruin of the Moghul Empire.
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(Bengal.)

SIXTH PAPER.

The questions are of equal value.

Six questions to be attempted: THREE from EACH half.

First Half.

Examiner—MR. INDUBHUSIAN BANERJEE, M.A.

1. Compare and contrast Plassey and Buxar with particular reference to the military resources of the combatants and the general results.
2. 'The English flag flew on every boat and store shed without warrant, sepoys plundered at will, presuming on English influence, and in fine the English name was made a shield for every kind of disorder and breach of Nawab's authority.' (*Gleig.*) Examine in this light the points at issue between the English and Mir Kashim.
3. 'He settled great foundations and when Lord Clive forded a deep water with an unknown bottom, he left a bridge for his successors over which the lame might hobble and the blind might grope their way.' (*Burke.*) Give your own view of the case.
4. Present a critical survey of Bengal in 1770 with special reference to the nature of the government obtaining in the province.
5. 'The Supreme Court of Judicature shall have full power and authority to entertain suits or actions against any person employed by, or directly or indirectly in the service of the Company, or any of His Majesty's subjects.' Comment *historically*.

Second Half

Examiner—MR. PARESCHANDRA MOOKERJEE, M.A.

6. 'My antagonists sickened, died, and fled. I maintained my ground unchanged, neither the health of my body nor the vigour of my mind for a moment deserted me.' (*Hastings.*) Examine and illustrate in the light of the quotation Hastings' quarrel with, and his ultimate triumph over, his factious council.
7. Discuss the successive stages in the transformation of Oudh from an independent ally into a dependent vassal.

8. To what extent did English party politics react on the history of Bengal during the administration of Warren Hastings?

9. 'The employment of personal severities, under the superintendence of British officers, in order to extract money from women and eunuchs, is an ignoble kind of undertaking.' (*Lyall*.) Review critically the case of the Begums of Oudh, and state how far Forrest has been able to exonerate Hastings from the above charge.

10. Discuss *any two* of the following:—

- (a) Hastings' treatment of Shah Alum.
- (b) The case of Mani Begum.
- (c) Hastings' letter to Sullivan.

SEVENTH PAPER

The questions are of equal value.

First Half

Examiner—DR. A. P. DASGUPTA, M.A., PH.D.

Answer ANY THREE questions.

1. Describe how the East India Company administered Fort William about the year 1756.

2. What was the early attitude of the Company towards the Diwani? What led them to decide to 'stand forth as dewan' in 1771?

3. By what measures did Hastings effect the abolition of the dual government?

4. What provisions were made from time to time under Warren Hastings for the administration of civil justice in Bengal?

5. Cornwallis was anxious 'to make everything as English as possible in a country which resembles England in nothing.' Elucidate the above statement, with reference to his administrative and legal reforms.

Second Half

Examiner—DR. J. P. NIVOGI, M.A., PH.D.

Answer ANY THREE questions.

1. 'Hastings' influence on the collection of the land revenue in Bengal was unhappy.' Do you agree?

2. Briefly describe the attempts made by the English to obtain information about the 'real value of the lands' in Bengal between 1769 and 1798.

3. On what grounds can you criticize the Permanent Settlement of 1793?

4. Describe the confused state of the currency in Bengal about the year 1770, and show how it affected the economic life of the province.

5. Write a note on the trade disputes between the English and the Nawabs of Bengal, indicating their reaction on the economic condition of Bengal.

(Sikhs.)

SIXTH PAPER

The questions are of equal value.

Answer ANY THREE questions from EACH half.

First Half

Examiner—MR. TEJA SINGH, M.A.

1. 'The work of Sikhism, as a national movement, in its initial stages, was to promote (1) a general improvement of intellect, and (2) a feeling of unity.' Give your estimate of this work done under the first six Gurus.

2. From your study of the relevant portions of Guru Nanak's works and the accounts of his travels, discuss the probability of his having met Emperor Baber. Determine the approximate date of their meeting.

3. Estimate the comparative reliability of the different versions of the events connected with Guru Arjun's death.

4. Discuss the question of hereditary succession in connection with the Sikh Guruship.

5. Criticize the statement :—

Amara Dās 'established some temporal power, built Kujarāwāl, and separated from the regular Sikhs the Udasi sect, which was founded by Dherm Chand, the son of Nanak, and was probably considered, at that period, as heretical.' (*Malcolm.*)

Second Half

Examiner—MR. INDUBHUSHAN BANERJEE, M.A.

1. 'Thou hast dammed the clear flowing stream of the Guruship and great misery shall result.' (*Amar Das to Bibi Bhani.*) Discuss, in relation to the above statement, the history of Sikhism under the successors of Hargobind.

2. Attempt, in the light of the Vicitra Natak, a critical account of the quarrel between Guru Gobind Singh and the Hill Rajas. How far was the quarrel inevitable?

3. To what extent were the reforms of Guru Gobind Singh the logical culmination of previous developments in Sikhism?

4. 'Whenever disobedience and rebellion among mortal men passeth all bounds, the Great Avenger raiseth up a severe man like me for the

punishment of their sins and the due reward of their deeds.' (Banda.)
Examine in relation to Banda's military adventures.

5. Discuss *any two* of the following :—

- (a) The execution of Guru Tegh Bahadur.
 - (b) The excommunication of the Masands.
 - (c) Guru Gobind Singh's relations with Bahadur Shah.
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SEVENTH PAPER

The questions are of equal value.

Six questions to be attempted, THREE from EACH half.

First Half

Examiner—MR. NARENDRAKRISHNA SINHA, M.A.

1. Trace the career of Jassa Singh Kalal, and estimate the part played by him in the Sikh struggle for independence.
2. 'The policy of Ahmad Shah was mainly of military adventure and not of territorial acquisition.' Discuss this view of the career of the Abdali in his relations with the Sikhs.
3. Give a brief history of the growth of the House of Patiala under Ala Singh and Amar Singh. Account for the failure of Patiala to establish a strong united Cis-Sutlej State.
4. How far is it true to say that the organization of the Sikhs during the Misl period was a kind of theocratic confederate feudalism?
5. Discuss the course of events leading to the Treaty of Amritsar (1809). Estimate its historical significance.

Second Half

Examiner—MR. INDUBHUSHAN BANERJEE, M.A.

6. Explain the significance of the conquest of Ladak and the relations of Ranjit Singh with Nepal.
 7. Do you think that the abandonment of the traditional Sikh method of warfare was justified? Substantiate your answer with reference to the battles of Firozshahar, Sobraon, Chillianwala, and Gujrat.
 8. 'In the matter of the Anglo-Sikh alliance, the British Government was the rider and Ranjit was the horse.' Explain and illustrate.
 9. Give a critical review of the causes that led to the second Anglo-Sikh war. To what extent is Mallet's theory of a premeditated conspiracy justified?
 10. Discuss *any two* of the following :—
 - (a) The death of Nau Nihal Singh.
 - (b) Gulab Singh and the British entanglements in Afghanistan.
 - (c) The execution of Jowhar Singh.
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(Rajputs.)**SIXTH PAPER.**

The questions are of equal value.

First Half

Examiner— PROF. D. R. BHANDARKAR, M.A., PH.D.

Six questions in ALL to be attempted: THREE from EACH half.

1. Indicate briefly the relative value of the Rājasthānī Literature and Inscriptions as sources of Rajput history.
2. Discuss the circumstances of the rise of Rajput dynasties in India.
3. Show clearly what part the Gurjara Pratihara dynasty played as an imperial power in North India.
4. Give a critical estimate of Bhoja Paramāra as a soldier and as a patron of arts and literature.
5. Describe the various Chāhamān clans that ruled over the different parts of Rajputana up till Circa 1400 A. D. Indicate how they were connected with one another.

Second Half.

Examiner— DR. N. C. BANERJEE, M.A., PH.D.

Only THREE questions are to be answered.

1. Sketch the history of the Candellas of Jejākabhukti, with special reference to their relations with the Pratihāras, their wars and their downfall.
2. Discuss the circumstances of the rise of the Gūhaḍavālas of Kanauj, and sketch the history of the achievements of the great rulers of the line.
3. Give a short critical estimate *either* of Kaṇa Cedi *or* Kumārapāla Caulukya.
4. Discuss—

Either,

‘The Rajput State was essentially a military State.’

Or,

‘Too much of militarism made the Rajputs an easy prey to Mussalman attacks.’

5. Write critical notes on *any three* of the following :—

- (a) Sources of revenue of a Rajput State.
 - (b) Historical value of the Rajput inscriptions.
 - (c) Religious toleration in Rajput States.
 - (d) Women in Rajput history.
 - (e) The Chāhamānas of Nadul.
 - (f) Early history of the Guhilots.
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SEVENTH PAPER

The questions are of equal value.

Only THREE questions are to be attempted from EACH half.

First Half

Examiner—MR. SUBIMALCHANDRA DATTA, M.A.

1. Comment on any three of the following :—

(i) 'The tract about Ballabhipura and northward is termed *Bhal*, which might have been the designation of the Rana's tribe prior to that of Guhilot; and most probably Moolthan, and all these regions of the Catti, Balli, etc., were dependent on Lohkote, whence emigrated Kanaksen; thus strengthening the surmise of the Scythic descent of the Ranas, though now installed in the seat of Rama.' (*Tod's History of Rajasthan.*)

(ii) 'Samarsi, prince of Cheetore, had married the sister of Prithvi Raj, and their personal characters, as well as this tie, bound them to each other throughout all these commotions, until the last battle on the Caggar.' (*Ibid.*)

(iii) 'To eternize the memory of this disaster the numerals "74½" are *tilac*, or accursed. Marked on the banker's letter in Rajasthan it is the strongest of sins, for "the sin of the slaughter of Cheetore" is thereby invoked on all who violate a letter under the safeguard of this mysterious number.' (*Ibid.*)

(iv) 'Sukta, whose personal enmity to Pertap had made him a traitor to Mewar, beheld from the ranks of Akbar the "blue horse" flying unattended. . . . He joined in the pursuit, but only to slay the pursuers, who fell beneath his lance; (*Ibid.*)

2. Describe the circumstances that led to the accession of the Sisodias to the *gadi* of Mewar. Give a critical estimate of the career and character of the first *Sisodia Maharana*.

3. Write a critical review on Col. Tod's sketch of the career of Maharana Pratap Singh (omitting details of the Battle of Haldighat).

4. Review the foreign policy of the Maharanas of Mewar in the first half of the 18th century, with particular notice of their diplomatic relations with the Marathas and the Kachchwahas.

5. Write a short essay on the Economic life of Mewar in the feudal age.

Second Half

Examiner—DR. K. R. QANUNGO, M.A., PH.D.

Answer THREE questions only.

1. What is Sir W. Haig's view about the origin of the Rāthods of Marwar? Do you agree with him? What is your own opinion on the subject? Give reasons for your answer.

2. Give a critical review of the reign of Rāv Chūṇḍā. Account for his success in home and foreign affairs.

3. What do the Marwar traditions record about the claims of Rāv Rapamalla upon the throne of Mandor? Examine them carefully.

4. Discuss the constitutional significance of the reign of Rāv Māddev.

5. Give a clear review of the rule of Maharaja Yasovantsingha, and comment on :—

‘Unhappy was the man who put faith in Maharajah Jaswant Singh..... chieftain of the Rathor clan.’ (*Sarkar.*)

(Marathas.)

SIXTH PAPER

The questions are of equal value.

First Half.

Examiner—DR. SURENDRANATH SEN, M.A., PH.D., D.LITT.

Answer ANY THREE questions

1. Discuss the nature and value of the English Factory Records as a source for the life and times of Shivaji.

2. Examine, in detail, the validity of Shivaji's claim for demanding, from the Portuguese, the Chouth, and briefly indicate the part played by Pitambar Sheuvi.

3. Comment on *any two* of the following :

(a) The advent of Shivaji opened a new era in the military history of the Marathas.

(b) Ranade was the first scholar to guide us properly to the real sources of Maratha history.

(c) The early life of Shivaji up to 1660 A.D. was practically a continuation of Shahaji's career, modified to suit the changed circumstances.

4. ‘The Rajyabhisheka or Shivaji's coronation, apparently a mere formality, was, in fact, a clear announcement of a bold and vigorous foreign policy.’

Justify this statement.

5. What was Shivaji's objective in the Karnatak expedition—plunder or annexation?

State fully the arguments advanced for both the views.

Second Half

Examiner—MR. D. V. APTE.

Answer ANY THREE questions.

1. To what extent was Shivaji indebted to his predecessors for his administrative institutions?

2. Indicate the services of Ramdas and his disciples to the Maratha cause in particular and the pan-Hindu movement in general.
 3. Do you think that Sambhaji had forfeited all claims to the allegiance of his subjects by his misrule and political incapacity?
 4. To what extent can Rajasan be regarded as his country's saviour?
 5. What part did caste rivalry play in Maratha politics from 1674 to 1713?
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SEVENTH PAPER

The questions are of equal value.

First Half

Examiner—MR. G. S. SARDESAI, B.A.

Attempt ANY THREE questions.

1. How far did the policy and the situation of the Saiyad Brothers facilitate the aims of the first Peshwa for extending Maratha power into the north?
2. Which do you consider to be the greatest achievement of Peshwa Bajirao I? Explain the circumstances under which it was made.
3. Describe the successive stages by which the Peshwas completed their conquest of the Karnatak regions.
4. Why were the Marathas unable to finally extinguish the existence of the Nizam's dominions in the south?
5. Discuss the responsibility of Najibud-Daula for the Maratha disaster at Panipat.

Second Half.

Examiner—MR. TRIPURARI CHAKRABARTI, M.A.

Attempt ANY THREE questions.

1. Do you agree with Duff's statement that the plains of Panipat were not more fatal to the Maratha empire than the early death of Peshwa Madhavrao I. Give full reasons.
2. What were the immediate and remote consequences of the murder of Peshwa Narayanrao?
3. Compare the services of Mahadaji Sindia and Nana Farnavis to the Maratha State.
4. What circumstances compelled Peshwa Bajirao II to accept British supremacy by the treaty of Bassein?
5. Write a critical note on Maratha-Mysore relations from 1784 to 1799.

(China and Japan.)**SIXTH PAPER***The questions are of equal value.***First Half***Examiner—MR. TRIPURARI CHAKRABARTI, M.A.**Answer ANY THREE questions.*

1. 'Opium is a mere incident in the dispute but no more the cause of the war than the throwing overboard of the tea in Boston Harbour was the cause of the North American Revolution.' (*Lecture of John Quincy Adams before the Massachusetts Historical Society in December, 1841*). How far is it a correct estimate of the situation that led up to the First Opium War?

2. Write a critical note on Sino-Japanese relations prior to 1894, and discuss the real causes of the war of 1894-95.

3. Sketch the genesis of the Boxer Movement, and account for its failure.

4. Indicate the importance of the Korean problem in Chinese history from 1895 to 1910.

5. Discuss the general trend of American policy towards China in the early decades of the present century.

6. Write notes on *any two* of the following :-

(a) The Treaty of Nanking, 1842.

(b) The Taiping Rebellion.

(c) The Chefoo Convention, 1876.

(d) The Franco-Chinese Treaty of Tientsin, 1885.

(e) The Convention of Peking relating to Burma and Tibet, 1886.

Second Half*Examiner DR. H. C. RAYCHAUDHURI, M.A., PH.D.**Answer ANY THREE questions.*

7. Discuss the history of the constitutional reform movement in China from 1901 to 1908.

8. Write a short note on the importance of the problem of Manchuria in Chinese history since the Treaty of Shimonoseki.

9. Examine critically the record of Li Hung-Chang in the spheres of internal administration and diplomacy.

10. Trace the growth of the Kuomintang as a political party in China, with special reference to the ideals and achievements of Dr. Sun Yat-Sen.

11. Analyze the spirit of the Chinese Revolution in the 20th century.

12. Write notes on *any two* of the following :-

(a) The Anglo-Japanese Alliance, 1902.

(b) The Root-Takahira Notes of 1908.

(c) The Twenty-one Demands, 1915.

(d) The Lansing-Ishii Agreement, 1917.

SEVENTH PAPER

The questions are of equal value.

Answer THREE questions from EACH half.

First Half

Examiner—DR. N. C. BANERJEE, M.A., PH.D.

1. Analyze the factors which made up the Restoration movement in Japan, and account for its triumph.
2. Describe the methods by which the Feudal System was abolished in Japan. Why did its destruction meet with so little resistance?
3. Examine briefly the process of the formation of the constitution of 1889. To what extent was this influenced by the model of Prussia?
4. Give some account of the economic problems and difficulties of Japan in the twentieth century, and trace their influence on the development of Japanese foreign policy.
5. How far is Japan's conduct in Manchuria since 1931 in accordance with her treaty obligations? Examine critically the arguments advanced in favour of Japanese action.

Second Half

Examiner—DR. S. C. SARKAR, M.A., PH.D.

1. Sketch the history of the introduction of modern culture in Japan, and indicate the part played by the Shogunate in it.
 2. Sketch the history of the events and circumstances that led to the Russo-Japanese War, and estimate the importance of the victory of Japan in the history of the world.
 3. Compare the political evolution of Modern Japan with that of China in the nineteenth century.
 4. Summarize the history of Japanese domination in Korea. Do you justify the annexation?
 5. Write critical notes on *any three* of the following:—
 - (a) Okuma's Pension Scheme.
 - (b) The Satcho oligarchy.
 - (c) The Anglo-Japanese Alliance.
 - (d) Saigo Takamori.
 - (e) Prince Katsura.
 - (f) Prince Yamagata.
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(Comparative Politics.)**SIXTH PAPER***The questions are of equal value.***First Half***Examiner—DR. U. N. GHOSHAL, M.A., PH.D.**Answer ANY THREE questions.*

1. Comment on the following statements:—
 - (a) 'The Roman monarchy was the earliest form of State administration completely and judiciously developed.'
 - (b) 'The primitive Greek oligarchies marked the beginning of constitutional history in the ancient State.'
 - (c) 'The many are more incorruptible than the few ; it is like water ; the greater the volume, the purer the stream.'
2. Analyze the functions of the Athenian *strategi*. Give an account of the military and financial administration of Athens during the age of Pericles.
3. Discuss the origin and nature of *Jus Gentium* and *Jus Naturale*, and examine their mutual relations.
4. Distinguish the essential from the incidental features of Feudalism. Consider under what circumstances Feudalism might be a desirable form of polity.
5. What influence did the Council of Ministers, the Popular Assembly, and the institutions of Law and Justice, exercise in limiting the Ancient Indian Kingship?

Second Half*Examiner—MR. INDUBHUSHAN BANERJEE, M.A.**Answer ANY THREE questions.*

1. 'He was, if not the creator of the Athenian democracy, at least the creator of the conditions which rendered this democracy possible.' Discuss this with reference to the reforms of Solon.
2. Compare the constitution of the Achaean League with that of the Aetolian League. Which of the two, in your opinion, approximates more closely modern federalism?
3. 'A State in which three popular assemblies have each the right of passing binding Acts of parliament, in which twenty magistrates with clashing authority have each the right of eliciting the sovereign will of the people, possesses no organization which can satisfy the needs for which constitutions exist.' Examine the above statement in relation to the republican constitution of Rome, and explain how in spite of these anomalies the constitution could still work.
4. 'We have, while the republic flourishes, the old kingly power exercised in fragments by different magistrates.' Illustrate the above

statement, and show how the growth of the Roman Empire led to the substantial enlargement of the original kingly power.

5. Give a brief account of mediæval representative institutions. How would you explain their general failure on the Continent?

SEVENTH PAPER

The questions are of equal value.

N.B. SIX questions in ALL to be attempted, THREE from EACH half.

First Half

*Examiner—*MR. P. N. BANERJEE, M.A., B.L., BAR-AT-LAW

1. 'What is expected from a well-constituted Second Chamber is not a rival infallibility, but an additional security.' (*Maine.*) Discuss with reference to the actual working of the constitutions of (i) France, (ii) England, (iii) U. S. A.

2. How far is it true to say that democratic practice in the U. S. A. has failed to attain the standard required by democratic theory? What are the causes of such failure?

3. 'The Congress in U. S. A. does not receive the attention and enjoy the confidence which ought to belong to a central organ of national life.' (*Bryce.*) Do you agree?

4. How far is it true to say that the framers of the American Constitution were guided by a dread of democracy? Have the checks and the balances of the constitution failed? If so, why?

5. How far does the judiciary protect and interpret the constitution in (i) England, (ii) U. S. A., (iii) Australia?

6. How can the constitutions of the following countries be amended: (i) Australia, (ii) the Irish Free State, (iii) South Africa, (iv) Switzerland?

Second Half

*Examiner—*MR. TRIPURARI CHAKRABARTI, M.A.

N.B.—Attempt ANY THREE questions.

7. What exactly is the relationship between the Dominion governments of Canada and South Africa and their constituent provinces?

8. 'France is a country with the forms of a republic, the institutions of a monarchy, and the spirit of an empire.' (*Munro.*) Discuss.

9. Compare the House of Lords and the Judicial Committee of the Privy Council as supreme appellate tribunals of the British Empire.

10. 'The constitution of Switzerland is the most instructive patent museum of politics.' (*Bryce.*) Discuss.

11. How far has the political philosophy of individualism been reversed in Soviet Russia and Fascist Italy?

12. To what extent have the principles of federalism been reflected in the proposed federal constitution for India as outlined in the White Paper of 1933?

(Constitutional History of the British Dominions.)**SIXTH PAPER***The questions are of equal value.***First Half***Examiner* MR. Y. J. TARAPOREWALA, M.A.*Attempt ANY THREE questions.*

1. What are the privileges assured, by law and by convention, to the French-Canadians in Canada? Discuss their applicability to Indian conditions.
2. Trace the evolution of the constitutional position of the States in the Australian Commonwealth.
3. 'Compromise is writ large over the South African constitution, and most of its defects are due to this factor.' Discuss.
4. To what extent can the Irish constitution be really called a Dominion?
5. 'The Statute of Westminster (1931) was epoch-marking, not epoch-making.' Comment.
6. Write a critical note on the question of the operation of Dominion legislation from 1926 to the present day.

Second Half*Examiner* MR. TRIPURARI CHAKRABARTI, M.A.*Attempt ANY THREE questions.*

1. Examine the British policy towards Canada from 1810 to 1837.
 2. How far is it true to say that the British Empire in 1900 differed fundamentally in character and constitution from what it had been in 1830?
 3. Discuss the considerations underlying the constitutions of the Senates in Canada, Australia, and South Africa.
 4. Describe the development that has taken place in the constitutional position of Governors-General of the Dominions since 1926.
 5. Is it still true to say that the Judicial Committee of the Privy Council is 'the most substantial link in the chain that binds the Empire together'?
 6. 'Great Britain and the Dominions are autonomous communities within the British Empire, equal in status, in no way subordinate one to another in any aspect of their domestic or external affairs, though united by a common allegiance to the Crown, and freely associated as members of the British Commonwealth of Nations.' Examine this definition in relation to inter-imperial relations.
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(Constitutional History of British India)**SEVENTH PAPER***The questions are of equal value.***First Half***Examiner*--MR. P. N. BANERJEE, M.A., B.L., BAR-AT-LAW.*Answer ANY THREE questions.*

1. Trace the growth of parliamentary control over Indian affairs from North's Regulating Act to the Government of India Act of 1858.
2. To what extent were the defects of the Regulating Act of 1773 remedied by the Amending Act of 1781 and Pitt's Act of 1784?
3. Explain the objects and results of the Charter Act of 1833.
4. 'The provinces have no innate powers of their own, and therefore have nothing to surrender in a *foedus*.' (*Report on Indian Constitutional Reforms*, 1918). Examine this view of federalism in the light of colonial constitutional history.
5. Discuss the constitutional relations of Indian States with the Government of India and the Crown since the outbreak of the last Great War.
6. Should residuary powers in Federal India reside in the Federal Government or in the Federating Units? Give reasons for your answer?

Second Half*Examiner*--MR. TRIPURARI CHAKRABARTI, M.A.*Answer ANY THREE questions.*

1. 'Whether from the administrative, the financial, or the legislative point of view, the concentration of authority at the centre was a cardinal feature of the pre-Reform Constitution.' How was this feature modified by the Government of India Act, 1919?
 2. Discuss the reserve powers of the Governor of a province in British India in regard to taxation, legislation, and administration, as provided in the Government of India Act, 1919.
 3. Give a critical review of the growth of the representative principle in the legislatures of India from 1853 to 1919.
 4. How far do the proposals embodied in the White Paper of 1933 for future federal constitution for India diverge from the normal federal type?
 5. 'The Government of India is an amazingly complex and dual form of administration. It has two chiefs, the Secretary of State in England . . . and the Viceroy.' (*Lord Curzon*.) Discuss.
 6. Discuss briefly the constitutional status and functions of the Council of India since the Crown took over the affairs of the East India Company in 1858.
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(Modern Europe.)**SIXTH PAPER***The questions are of equal value.**Answer ANY THREE questions from EACH half.***First Half***Examiner—MR. S. N. BANERJEE, B.A. (Oxon)*

1. Estimate the extent of constitutional progress made under the Bourbons, and indicate the political forces which were at work under the restored monarchy.
2. Sketch the history of the reactionary movement in Europe inaugurated by the European Alliance, and account for its failure by the middle of the 19th century.
3. What were the impediments to German unity, and how did the Liberals strive to eliminate them?
4. Sketch the history of the Carbonari movement in Italy, and indicate the forces that roused the desire for national unity.
5. Write critical notes on *any two* of the following : -
 - (a) Frankfort Parliament.
 - (b) Hetairia Philike.
 - (c) Doctrinaires.
 - (d) Decabrist revolution.
 - (e) Republic of Cracow.

Second Half*Examiner—DR. A. P. DASGUPTA, M.A., PH.D.*

1. 'The Polish Constitution of 1815 was in some respects the most progressive and liberal constitution of Europe of that time.' Develop. To what would you attribute the failure of this constitution?
 2. 'The policy of the British foreign office with regard to the Eastern question has as a rule been one of undignified protest and panic.' How far can this charge be substantiated with reference to the history of the Near East between 1825 and 1856?
 3. 'Violence must not be either at home or abroad the character of our government. At home every appeal to force, abroad every encouragement to popular insurrection is a violation of the principle.' Do you think that Casimir-Perier's administration in France acted strictly upon the principle laid down in the above speech?
 4. Discuss the character of the Austrian empire under Metternich, and trace the growth of national opposition in Hungary and Bohemia.
 5. 'The February Revolution of 1848 was the nemesis of incompetence and pusillanimity rather than of oppression and unwisdom.' Discuss.
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SEVENTH PAPER

The questions are of equal value.)

Attempt SIX questions in ALL: THREE from EACH half.

First Half

Examiner—MR. R. B. RAMSBOTHAM, M.A., LL.B.

1. Give a history of the Zollverein, and explain its nature: estimate its effects (a) on German, (b) on European, politics in the first half of the nineteenth century.
2. 'The German movement of 1848 was two-fold.' Explain the meaning of this comment, and indicate how far this two-fold movement was successful.
3. Write critical notes on *any two* of the following:—
Nessetrode.
Guizot.
Count Andrassy.
Castelar.
The Commune.
4. State the circumstances under which the Triple Alliance came to be formed. What was its ultimate contribution towards the last world-war?
5. Give an account of Bismarck's foreign policy, and estimate its effect on the peace of Europe.

Second Half

Examiner—DR. N. C. BANERJEE, M.A., PH.D.

Only THREE questions are to be answered.

1. Enumerate the reforms of Czar Alexander II, and give an estimate of his character and ideals.
2. Sketch the history of Austria-Hungary from 1848-1870, and discuss the leading features of the constitution of 1867.
3. Discuss the chief social and political problems of United Italy after 1870.
4. Criticize the main provisions of the political settlement made by the Congress of Berlin (1877) in the light of subsequent events.
5. Account for the downfall of the Second Empire in France, and criticize the foreign policy of Emperor Napoleon III, with special reference to Italy and Germany.
6. Write critical notes on *any three* of the following:—
(1) Clericalism in France and Germany.
(2) Foundation of Italian colonial empire after 1870.
(3) The 'Bulgarian Atrocities'.
(4) The Fashoda incident.
(5) Leon Gambetta.
(6) Political ideals of Kaiser William II.

(Essay.)**EIGHTH PAPER***Examiner*—PROF. S. N. SEN, M.A., PH.D., D.LITT.Write an essay on *any one* of the following subjects:—

- (1) Disraeli as the exponent of Neo-British Imperialism and Tory democracy.
- (2) 'The Buddhist Constantine was all the greater than his Christian Prototype, because he did his very best to enforce in his own personal life as well as in his empire the tenets of his creed.'
- (3) 'Assyria's greatest contribution to world culture is the art of warfare and the art of refined cruelty.'
- (4) The constitutional position of the Prime Minister in England.
- (5) Conflict between the League of Nations and National aspirations.
- (6) Japanese Imperialism and the balance of power in the Far East.
- (7) Imperialism and Socialism in the 19th century.
- (8) The wars of the Rajputs constituted a prologue to the Islamic invasion of India.
- (9) Mahratta saints and their contributions to Mahratta revival.
- (10) Islam's contribution to Indian culture.
- (11) Unemployment in India.
- (12) British Imperialism and autonomy within the Empire.
- (13) Democracy—its future under new world conditions.
- (14) 'I gave you all . . . and you have rewarded me with confiscations, disgrace, and a life of impeachment.' (*Warren Hastings*.)
- (15) The democratic ideal in Sikh religion and politics.

ANCIENT INDIAN HISTORY AND CULTURE.**FIRST PAPER***The questions are of equal value.***First Halt***Examiner*—DR. PRABODICHANDRA BAGCHI, M.A., D.LITT.*Answer ANY THREE of the following questions.*

1. How far in your opinion is it possible to consider the *Rigveda* as an Indo-Iranian document?
2. Discuss briefly the question of the Aryan migration into India.

3. What do you know of the 'War of the Ten Kings'? Bring out the importance of this war in the history of the early Vedic period.
4. Discuss critically the materials available from the Vedic sources on the 'Caste system'.
5. Discuss how far it is possible to consider Parikṣit as a historical king.
6. What was the real position of the king in the Vedic period?

Second Half

Examiner—DR. V. S. SUKTHANKAR, M.A., PH.D

Answer ANY THREE of the following questions.

1. How many distinct Janamejays were there in the Paurava line? Are you satisfied with the identification of the two Janamejaya Pārikshitas, attempted by some scholars? If not, why not? Give the names of the contemporaries of the Janamejays (whom you recognize as distinct from each other) in the Yādava, Ayodhya, and Videha lines, in the form of a synoptic table.
2. Sketch the position of women in the Epic Age, with special reference to their social and legal position as (a) maidens, and (b) widows.
3. What light do the epics throw on (a) royal duties, (b) royal occupations, (c) Assembly and Council, and (d) the imperial city of the period?
4. Compare and contrast the two epics, the Mahābhārata and the Rāmāyaṇa. Which is the older of the two?
5. Describe the structure and the mutual relationship of the four castes in the heroic age of India.

SECOND PAPER

The questions are of equal value.

First Half

Examiner—DR. HEMCHANDRA RAYCHAUDHURI, M.A., PH.D.

Not more than THREE questions to be attempted.

1. Comment on *any two* of the following passages :—
 - (a) 'In the Purāṇic lists the earliest dynasty which can claim historical reality is that known as the Saisunāga.'
 - (b) 'Ajātasatru's son, Darsaka, and his grandson, Udaya, must be regarded as the contemporaries of Darius, the son of Hystaspes.'
 - (c) 'I will root out these Vajjians, mighty and powerful though they be.'
 - (d) 'The fiercely fighting Greeks will not stay in the *Madhya-dēśa*; there will be a cruel, dreadful war in their own kingdom, caused between themselves.'

2. Write short explanatory notes on *any four* of the following :—

- (a) Pūrvanandāḥ and Navanandāḥ.
- (b) The Nysāens are not an Indian race.
- (c) The 'Gandaritai' and the 'Praisiai' were reported to be waiting for Alexander with a powerful army.
- (d) 'Here we perform the sacrifices for Pushyamitra.'
- (e) Simuka will destroy the remains of the Suṅgas' power.
- (f) Khāravela had had Pithuḥa ploughed with a plough.

3. There are no real grounds for thinking that the Sakas ever figured as invaders of any part of Northern India above Kāthiāwāḍ and Mālwa.' Critically examine this statement.

4. Write a short history of the Kushān kings, with special reference to (a) the extent of their empire, (b) system of provincial government, and (c) patronage of learning.

5. Discuss the origin of the Pallavas of Kāñchī and their relations with (a) the Imperial Guptas, (b) the early Gangas of Southern Mysore, and (c) the early Kadambas of Vaijayaṇṭi.

Second Half

Examiner- DR. HEMCHANDRA RAY, M.A., PH.D.

Attempt THREE questions only.

1. Write a note on foreign invasions of India during the period c. 550 B.C.—323 B.C. Refer to your sources of information.

2. Give a short account of the kingdoms that rose on the ruins of the vāhana empire in the Deccan.

3. Critically examine the following statement :—

'By whom, when he prepared himself to restore the fallen fortunes of (his) family, a (whole) night was spent on a couch that was bare earth, having conquered the Puṣyamitras, who had developed great power and wealth, he placed (his) left foot on a foot-stool which was the king (of that tribe himself).'

4. Sketch the career of Aśoka, with special reference to (a) his *digvijaya*, (b) his *Dhamma-rijaya*, (c) his foreign relations, and (d) extent of his empire.

5. Give a brief account of the Yue-chi migrations and conquest of India. Indicate your sources of information.

THIRD PAPER.

The questions are of equal value.

First Half.

Examiner—DR. HEMCHANDRA RAY, M.A., PH.D.

Attempt THREE questions only.

1. Critically review the history of the Hindu Sāhis of Afghanistan and the Punjab in the light of the following statement of al-Bīrūnī :—

‘We must say that, in all their grandeur, they never slackened in the ardent desire of doing that which is good and right, that they were men of noble sentiment and noble bearing.’

2. ‘It was not Mahipāla’s asceticism or his envy and religious bigotry that prevented his name from figuring in the lists of the Muslim chroniclers among the opponents of the Yaminīs.’ Discuss.

Or,

‘Attending to his (Kedāramīśra’s) wise counsel the lord of Gauḍa long ruled the sea-girt earth, having eradicated the race of the Utkalas, humbled the pride of the Hūnas, and scattered the conceit of the rulers of Draviḍa and Gurjara.’ Elucidate.

3. Write a short note on the struggles of the Chālukyas of Aṇahila-pūṭaka with the Muslims. Refer to your sources of information.

Or,

Briefly review the history of the Kalacuris of Ḍāhala with special reference to the reigns of Gaṅgeyadeva and Lakṣmīkarṇa.

4. Discuss the relations between Kanauj and the Deccan in the seventh century A. D. with special reference to the reign of Pulakeśin II.

Or,

Give a brief account of the reign of Rājendra Coḷa I.

Second Half.

Examiner—DR. BINAYCHANDRA SEN, M.A., PH.D.

Attempt ANY THREE of the following.

1. Trace the downfall of the Western Chālukyas of Bādāmi. What do you know of the origin of the Rāshṭrakuṭas who succeeded them ?

2. Attempt an essay on the efforts made by the Rulers of Trans-Vindhyan India to influence the politics of the North from the eighth to the eleventh century A. D.

3. Discuss the position of the Choḷas as a maritime power.

4. (a) Briefly review the career of Vikramāditya VI as an aggressive ruler.

(b) What were the principal effects of the collapse of the Chālukya dynasty of Kalyāṇi on the political history of the Deccan ?

5. What part was played respectively by Vishnuvardhana and Viraballāla II in the development of the Hoysala power? Give your answer with special reference to the relations of the Hoysalas with the Later Chālukyas and the Cholas.

FOURTH PAPER

The questions are of equal value.

First Half

Examiner—DR. HEMCHANDRA RAYCHAUDHURI, M.A., PH.D.

THREE questions only to be attempted.

1. What light do the Rig Vedic hymns throw on the topography of the Pañjāb? How does the Rig Vedic account in this respect compare with that of (a) the later Vedic texts, and (b) the Purāṇas?
2. Did the ancient Hindus possess an accurate idea of the configuration of India? To what extent does the ninefold division of the country accord with reality?
3. Discuss the identification of the following mountains: (a) Mahendra, (b) Pāripātra, (c) Arbuda, and (d) Vaidūrya.
4. Locate *any eight* of the following cities and Janapadas:—
(a) Āsandivat, (b) Kikaṭa, (c) Gaṇḍhārya, (d) Harikela, (e) Sauvira,
(f) Daśārṇa, (g) Banavāsī, (h) Aparānta, (i) Tosala,
(j) Prāgyotisha.
5. Draw a map of India, locating the principal rivers issuing from the Vindhya and the Riksha mountains.

Second Half

Examiner—MR. HARANCHANDRA CHAKRADAR, M.A.

Only THREE questions are to be attempted.

1. Give a succinct account of Fa-hien's itinerary, locating the principal places visited by him in India and the Indian Archipelago.
2. Draw a map of India, showing the Pāla Empire at the height of its power and marking therein the countries conquered by the Pālas, and also those in alliance with them.
3. What did the Chinese writers mean by the *Madhyadesa*? How far did it differ from the *Madhyamā-dik* of the Vedic age?
4. Indicate the extent of the five countries: Aṅga, Vaṅga, Kāliṅga, Suhma, and Puṇḍra—according to Epic and Paurāṇic traditions. Define the

limits of the countries that Yuan Chwang found covering the same area at the time of his visit and locate their chief cities and ports.

5. Write geographical notes on the following : Kāpiśi ; Arachosia ; Madhyamikā ; Anurādhapura ; Uraiyur ; Dhānyakataka ; Hippokura ; Takht-i-Bahi.

(Group I.A.)

I.A. (Archæology—Epigraphy, etc.)

FIFTH PAPER.

The figures in the margin indicate full marks.

Attempt THREE questions from EACH group, of which Question No. 1 is compulsory.

Group A

Examiner—PROF. D. R. BHANDARKAR, M.A., PH.D.

1. Translate *four* of the following extracts into English, adding critical and short explanatory notes :— 20

(a) Sarvata vijite mama yutā cha rūjūke cha prādesike cha pañchasu pañchasu vāsesu anusaṃyānaṃ niyātu etāyeva athāya imāya dhammānusaṣṭiya yathā aṇāya pi kaṇimāya.

(b) Jano tu uchāvacha-chhamdo uchāvacha-rāgo te sarvaṃ va kāsanti eka-desañ va kāsanti vipule pi dāne yasa nāsti sayame bhāva-sudhitā va kataṃñatā va daḥhabhatitā cha nichā bāḥhaṇi.

(c) Yaṃ tu kichi parikamate Devānaṃ Priyadasi rūjā ta savaṃ pūratrikāya kiṃti sakale apa-parisave asa esa tu parisave ya apumīnaṃ dukaraṃ tu kho etaṃ chhudakena va janena usaṭena va aṇātra/ agena parākramena savaṃ parichajitpā eta tu kho usaṭena dukaraṃ.

(d) Lajūkā pi laghamti paṭichalitave maṃ pulisāni pi me chhamdamaṇṇāni paṭichalisanti te pi cha kani viyovadisanti yena maṃ lajūkā chaghamti ālādhayitave.

(e) Hemevā sava-nikāyesu paṭivckhāmi sava-pāsaṃdā pi me pūjitā vīvidhāya pūjāya e chu iyaṃ atanaṃ pachūpagamane se me mokhya-mate.

(f) Eta tu mahiḍāyo bahukaṃ cha bahuvidhaṃ cha chhudam cha niratham cha maṃgalaṃ karote ta katavyameva tu maṃgalaṃ apa-phalaṃ tu kho etarisaṃ maṃgalaṃ ayaṃ tu mahā-phale maṃgale ya dhamma-maṃgale.

2. State in brief the provenance of the Minor Rock Edicts of Aśoka which have been discovered up to date. 15

3. Give a summary of the instructions issued by Aśoka for the guidance of high officials at Kalinga. 15

4. Discuss the scheme of Aśoka's administration as you can gather from his edicts. 15

5. Can you show from his edicts that Aśoka might have adopted certain elements in his Dhamma from any religion other than Buddhism ?

Group B.

Examiner—DR. NIRANJANPRASAD CHAKRABARTI, M.A., PH.D.

1. Transcribe *one* of the extracts quoted in Question 1, Group A, in Aśoka Brāhmī, and state the principal characteristics of the alphabet of the Kūṣāṇa inscriptions. 18

2. Comment fully on the following with reference to the context :— 16

(a) Saṃpūṇa-chaturvīsati-vaso tadāni vadhamānasesayo Ven-ābhivijayo tatiye Kalīṅga-rāja-vaṃse purisayuge Mahārāj-ābhisechanam pāpunāti.

(b) Magadhānam cha vipulam bhayaṃ janato hathi Sugamgiyam pāyayati Māgadham cha rājānam Bahasatimitam pāde vaṇḍāpayati.

3. Mention all that you know about Pushyamitra and his reign from inscriptions and literature. 16

4. (a) Discuss the linguistic peculiarities of the first two extracts in Question 1, Group A. 8

(b) What do you know of Khāravela's expeditions to the Andhra dominions in the Deccan? How far did he succeed in his attempts?

5. Write notes on *any six* of the following :— 16

Pīṭhūṇḍa, Musika-nagara, Cetrirājavasa, Heliodora, āgi-khaṇḍhāni, Ketala-pūta, itihhaka-mahāmātā, dharmā-yātā, and Moneya-sūta.

(Group I)

I.A. (Archæology—Epigraphy, etc.)

SIXTH PAPER

First Half

Examiner—DR. BINAYCHANDRA SEN, M.A., PH.D.

The questions are of equal value.

Attempt ANY THREE of the following.

1. What evidence is there in support of the theory advocated by some scholars that Gautamīputra Śātakarṇi and Vāsishṭhiputra Puṣumāyi ruled conjointly?

2. Point out the landmarks in the struggle for supremacy between the Śātavāhanas and the Saka Satraps.

3. What light is thrown on the economic and religious condition of the Deccan by the inscriptions of the Śātavāhanas and the Kshaharātas?

4. (a) Who was the Kanishka of the Āra inscription of the year 41 ?
Give reasons for your answer.

(b) Write short notes on :—

- (i) Erjhuṇa kapasa puyae.
- (ii) Muroḷasa.
- (iii) Sarvasa Sak(r)astanasa puyae.

5. 'Kharoshthī cannot, like Brāhmī, be characterized as the national alphabet of India.' Discuss.

Second Half

Examiner- DR. A. S. ALTEKAR, M.A., I.L.B., D.LITT.

The figures in the margin indicate full marks.

Attempt THREE questions from this half, including the

FIRST ONE which is compulsory.

1. (a) Describe and illustrate the principal varieties of the Gupta alphabet. What were the provinces where they were prevailing ? 18

(b) Write the following passage in appropriate original characters :—

Punāti bhuvanatrayaṃ Paśupater-jaṭāntarguhānīrodhaparimokshaśi-ghramiva pāṇḍu Gāṅgaṃ payaḥ.

2. (a) State, giving reasons in detail, whether the Allahabad Stone Pillar Inscription of Samudra Gupta is posthumous. 16

(b) Write a note on the sale of lands under the Gupta administration.

3. (a) Discuss the nature, extent, and result of the southern expedition of Samudra Gupta. 16

(b) What light do inscriptions throw on the extent of the Gupta Empire in c. 460 A.D. ?

4. Describe the administrative system of the Gupta Empire, illustrating your answer with quotations from or references to the inscriptions you have studied. 16

5. Mention the names and dates of accession of the five consecutive successors of Kumāra Gupta I. Discuss the various theories in the field about the interrelation and jurisdiction of these emperors. 16

(Group I.)

I.A. (Archæology—Epigraphy, etc.)**SEVENTH PAPER****(Numismatics.)***The questions are of equal value.**Only THREE questions are to be attempted from EACH half,**including the LAST ONE in each case.***First Half***Examiner—MR. JITENDRANATH BANERJEE, M.A.*

1. 'The coins bear witness to the existence during this period (1st century B.C. to 1st century A.D.) of two well-defined dynasties of Scythic origin and of other Scythic powers less clearly marked.' (*Rapson.*) Examine.

2. Describe the special features of the coins of the Auḍumbaras and the Mālavas. How do you date them?

3. (a) 'No sound reason exists for connecting the Pañchāla Mitra coins with the Suñgas.' (*Smith.*) Do you agree?

(b) Write what you know about the Rājanya coins.

4. Explain the significance of—

(a) the bilingual coins of Eukratides ;

(b) the 'Soter Megas' coins.

5. Write notes on *any three* of the following :—

(a) The coins of Sophytes.

(b) Die-struck coins of Taxila.

(c) The reverse devices of the Kanishka group of kings.

(d) The Nāga coins.

(e) The coins of Avanti.

(f) The coins of the Kadphises group of kings.

Second Half*Examiner—MR. NANIGOPAL MAJUMDAR, M.A.*

6. 'Probably all these three uses (local, dynastic or personal) are to be traced in different coinages of the Andhra dynasty.' (*Rapson.*) Discuss.

7. Estimate the importance of—

(a) the Jogalthembi hoard ;

(b) the Sarvania hoard.



8. 'The gradual disappearance of meaningless elements is clearly a guide to the chronological arrangement of the specimens of each type.' Explain this statement, with reference to the Gupta and the Kṣatrapa coins.

9. (a) Give an account of the silver coins of Kumāragupta I.

(b) In which types of Gupta coins can you correlate the legends with the devices ?

10. Write descriptive and explanatory notes on :—

(a) The large lead coins from the district of Karwar in N. Kanara.

(b) Caṣṭana's coins.

(c) The Elephant-rider type of coins in the Gupta gold series.

(d) The *Dvādaśāditya* coins.

(e) The Muhammadpur find of coins.

I.A. (Archæology, etc.)

EIGHTH PAPER

First Half

Examiner—DR. RAMESCHANDRA MAJUMDAR, M.A., PH.D.

1. Write an essay on *any one* of the following subjects :—

(a) Indo-Greek coins—their general characteristics, historical importance and influence on the development of the art of coinage in India.

(b) Punch-marked coins.

(c) Indian coins and inscriptions from 200 B.C. to 300 A.D. as a source of social and economical history of ancient India.

Second Half

Examiner—MR. JITENDRANATH BANERJEE, M.A.

1. Describe *any eight* of the types of coins reproduced on the attached plate, and add your remarks on each.

(Group I. B.) .

(Sculpture and Painting.)**FIFTH PAPER***The questions are of equal value.***First Half.***Examiner—DR. KALIDAS NAG, M.A., D.LITT.**Attempt ANY THREE questions.*

1. In what way and to what extent can Maurya sculpture be called 'the Gangetic aftermath of the art of the Indus Valley' ?

2. 'The Gandhāra School is merely an episode in the history of Indian art.' 'It is Indian and colonial from a Hellenistic point of view, it is Hellenistic and colonial when viewed from India.' Discuss.

3. What is the trend of Indian sculptural art during the fifth and sixth centuries of the Christian era ? Give a short and intelligent account of the formation of different local schools of art during this period, bringing out at the same time the most essential qualities of each.

4. Give a critical estimate of Pallava sculpture. How far is it justifiable to say that Pallava sculpture is the result of the continuation of the earlier art-idiom of the School of Veṅḡi ?

5. How are the cave-paintings at Bāgh and Sigriyā related to the frescoes exhibited on the cave-walls at Ajantā ? To what extent did the Ajantā tradition influence the subsequent history of the art in India ?

Second Half.*Examiner—MR. NIHARRANJAN RAY, M.A.**Attempt ANY THREE questions.*

6. The Ceylonese 'primitives' are in a way intimately related with the early Indian Yakṣa and Yakṣī statues from Patna, Besnagar, and elsewhere as well as with the later colossal Buddha and Bodhisattva statues from Mathurā, Sāranāth, and Śrāvastī. Discuss.

7. In spite of their subjects being lively and varied, the reliefs of Borobudur and Prāmbānām are soulless and monotonous. Do you agree? In what way do they differ from the reliefs of Panataram, and what do you consider to be the reason of this difference?

8. Of all the Indianized countries and islands of South-East Asia, Campā and Kambuja were the least influenced by Indian art-tradition so far as the sculptural art of these two countries are concerned. Discuss.

9. It had been the opinion of scholars that Javanese bronzes were merely a colonial derivation of the art as practised in Nālandā; it is now being contended that Nālandā also experienced a counter wave from Java so far as this branch of art is concerned. What is *your* opinion with regard to these contentions?

10. Relate your acquaintance with the frescoes discovered by Lo Coq and Stein at Dandan-Uiliq and other centres at Khotan. How do you connect them with the Indian art-tradition of Ajanṭā?

Group I.B

(Archæology—Fine Arts.)

SIXTH PAPER

(Iconography.)

First Half.

Examiner—MR. JITENDRANATH BANERJEE, M.A.

The questions are of equal value.

Attempt THREE questions only.

1. 'The Indian artists, like the artists of other countries, followed from a very early time some definite canons of proportion in the carving of images.' Discuss.

2. 'Sectarian prejudice has often created new images.' Elucidate. Explain, in this connection, the importance of sectarianism in religion as a contributory factor to the growth of iconoplastic art in India.

3. Discuss the iconographic importance of the central reliefs in the three main niches of the Viṣṇu temple at Deogarh (Jhansi).

4. Write short descriptive notes on the following types of images, and make your own remarks on them :—

(a) *Brahmā* (b) *Arđhanārīśvara* ; (c) *Kalyāṇasundara mūrti*.

5. Trace the evolution of the principal types of Durgā-Pārvatī icons.

Second Half.

Examiner—MR. N. K. BHATTASALI, M.A.

The figures in the margin indicate full marks.

Answer Question 5 and ANY TWO from the rest.

1. By what particular traits would you recognize an image of Amitābha ?
Name and describe three conceptions that emanated from him. 16

2. Describe the following varieties of Avalokiteśvara — 16

(i) *Ṣaḍakṣarī*.

(ii) *Sirīhanāda*.

(iii) *Hari-hari-harivāhanodbhava*.

3. Recount the episode of the *Mahāprātihāryya* of Śrāvastī, and describe how it is represented in sculpture at Bharhut, Ajanta, Benares, and Borobudur. 16

4. 'The Buddhists adopted in their mythology certain of the Brahmanical gods, but modified their character and importance.'

Comment. Describe some of the important gods of the Brahmanical pantheon, as they are represented in early Buddhist sculpture. 16

5. Identify, and describe the special features of the deities represented on plates A and B. 18





(Group I. B.)
(Archæology—Fine Arts.)

SEVENTH PAPER

(Architecture.)

First Half

Examiner—DR. STELLA KRAMRISCH, PH.D.

The figures in the margin indicate full marks.

Attempt THREE questions only.

1. Describe the Kailāsanātha temple at Conjeevaram with regard to ground plan, elevation, architectonic details, and relation of architecture to sculpture. 16·7
2. Write an account of the temples at Osīā, and point out their chronological sequence on the basis of stylistic data. 16·7
3. Which are the elements in common to 'hill-architecture' in Kashmir, Chamba, etc., the Western Ghats, etc.? Also discuss the main characteristics of each of these. 16·7
4. Discuss the motifs of wooden origin as well as the special 'cave' features in Cave XIX, Ajanta. 16·7
5. Trace the transformation of the Stambha from the Maurya to the Gupta period. 16·7
6. Write an account of the architecture of Mohenjo-Daro. 16·7

Second Half.

Examiner—DR. KALIDAS NAG, M.A., D.LITT.

The questions are of equal value.

Answer ANY THREE of the following.

1. In what sense can the temple of Pāhādpur be considered as a prototype of the structural designs of Indonesian monuments?
 2. Describe the architectonic peculiarities of the Bayon group of temples.
 3. Indicate the Pallava contributions to the architectural form of the earliest temple type in Java.
 4. Compare the monuments of Champa and Cambodia, showing in what way they differ in general design and æsthetic sentiment.
 5. Write a short essay on the migration of Indian architectural motifs outside India.
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(Group I.B.)

EIGHTH PAPER

The figures in the margin indicate full marks.

First Half

Examiner—PROF. SHAHID HASAN SUHRAWARDY, B.A. (Oxon.)

THREE questions only to be attempted.

1. Write short notes on *any three* of the following :—(1) The Rhodian School of Hellenistic art, (2) Alexandrian grotesque art, (3) Drapery in Hellenistic art, (4) Persepolitan columns, (5) Oxus Treasure, (6) Turki influences in Central Asian art, (7) 'Gothic' jewellery, (8) Pompeian Frescoes, (9) Technique of Jaipur wall painting. 16.7
2. Give in your words the character and significance of Achaemenian art. Compare it with the Mauryan. 16.7
3. What do you know of the Altar of Pergamon, and what influence has it had on the development of bas-relief technique? Illustrate with examples from Northern India. 16.7
4. Evaluate the contribution of Hellenism in the sculpture of Gandhāra, Mathurā, and Amarāvati. 16.7
5. Write a note on the animal style, with special reference to Scythian, South Russian, and Siberian art. 16.7
6. Discuss the theories regarding the 'Indus Civilization'. 16.7

Second Half

Examiner—DR. STELLA KRAMRISCH, Ph.D.

Write an essay on *any* of the following subjects :—

- (1) What are the elements of 'Mazdaistic art' ? 50
 - (2) Kushān Sculpture. 50
 - (3) Amarāvati Sculpture. Analyze any of its relief compositions. 50
 - (4) Structural 'Gupta architecture'. 50
-

(Group II.)
(Social and Constitutional History.)

FIFTH PAPER.

The questions are of equal value.

First Half.

Examiner—DR. UPENDRANATH GHOSHAL, M.A., PH.D.

Answer ANY THREE questions.

1. Consider how far the caste system was developed in the age of the Rig-Veda. What further changes did it undergo in the later Vedic period?
2. How far may the *Khattiyas* of the early Buddhist Literature be properly regarded as a caste? Discuss their status as compared with that of the Brāhmaṇas.
3. Summarize after Manu the duties of the Brahmachārin.
4. Briefly refute the view that the age of Vātsyāyana was marked by a general low tone in private life.
5. Write what you know of the methods used by the Vedic Indians to build their houses.

Second Half.

Examiner—MR. HARANCHANDRA CHAKRADAR, M.A.

Answer ANY THREE questions.

1. Describe the various methods of disposal of the dead in ancient India.
 2. What was the attitude in ancient India towards living in a joint family? Discuss the advantages and disadvantages of the system.
 3. What are the principal purificatory rites (*saṃskāras*) prescribed in the Grihya-Sūtras? Discuss their significance in the life of a Vedic Indian.
 4. Describe the life of a forest-dwelling hermit (*vānaprastha*). Did all the castes resort to this *āśrama* in ancient India?
 5. Describe the position of woman in ancient Indian society as delineated in the *Kāmasūtra* of Vātsyāyana; compare it with that derived from the Vedic literature.
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(Group II.)

SIXTH PAPER

The questions are of equal value.

First Half

Examiner—DR. NARAYANCHANDRA BANERJEE, M.A., Ph.D.*Answer ANY THREE of the following questions.*

1. Write an account of Agriculture, Handicrafts, and Trade on the basis of the Vedas.
2. What light do the Greek writers throw on the economic conditions of ancient India?
3. Discuss the regulations regarding Industrial Apprenticeship and Partnership on the basis of the *Smṛiti* texts.
4. Discuss the problem of the Depressed Classes as presented in the ancient Brahmanical and Buddhist Texts.
5. To what extent was Labour self-governing in ancient India?

Second Half

Examiner—DR. RADHAKAMAL MOOKERJEE, M.A., Ph.D.*Only THREE questions are to be answered.*

1. Give a short account of the maritime trade of India during the first five centuries of the Christian era.
 2. Discuss the socio-economic ideals of the Arthaśāstra. Did Kautilya advocate State socialism?
 3. Describe the part played by the village community in the economic life of India.
 4. What were the steps taken by Hindu governments to prevent the exploitation of workmen and poor purchasers by capitalists?
 5. Write critical notes on *any three* of the following:—
 - (a) Sources of revenue of Hindu States.
 - (b) Laws for the protection of labourers.
 - (c) Monopolies in the Arthaśāstra.
 - (d) Indian textile industry.
 - (e) Famine relief in Hindu India.
-

(Group II.)

SEVENTH PAPER

First Half

Examiner—DR. NARAYANCHANDRA BANERJEE, M.A., PH.D.*The questions are of equal value.**Only THREE questions are to be attempted.*

1. Discuss the constitutional position of the Hindu King—
 - (a) in the Vedic period.
 - (b) in the Maurya period, and
 - (c) on the eve of the Mussalman invasion.
2. Discuss the Hindu theories about the state of nature and the origin of sovereignty, and compare these with similar theories in the West.
3. Write critical notes on the following :—
 - (a) The Hindu judiciary.
 - (b) Espionage in ancient India.
 - (c) Kaṇṭakaśodhana.
 - (d) Daṇḍanīti.
 - (e) Mantrīparīṣad.
4. Discuss the basic principle in the concept of the Maṇḍala, and classify the friendly and inimical States within the same.
5. Sketch the history of Republicanism in ancient India, and account for the gradual disappearance of the republics.

Second Half

Examiner—DR. NARENDRANATH LAW, M.A., B.L., PH.D.

Write an essay on any of the following :—

- (1) 'In India, although the social organization contained within its bosom the dominance of the Brāhmanas and was to a large extent evolved by it, the State itself never became a theocracy in the proper sense of the term.'
 - (2) "The Hindu king's claim to divine right was very different from that of the monarchs of Europe in the latter part of the Middle Ages."
 - (3) "Kautilya was no mere Machiavelli but a statesman of remarkable foresight who anticipated many of the problems of the modern age."
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(Group II.)

EIGHTH PAPER

The questions are of equal value.

First Half

*Examiner—DR. HARANCHANDRA CHAKRADAR, M.A.**Answer ANY THREE questions.*

1. Describe the physical features of the peoples whom the Vedic Aryans found when they first entered India. What do you think to have been their origin? Are there any people akin to them living anywhere inside or outside India?

2. Discuss how far Risley was correct in using the terms *Scytho-Dravidian* and *Mongolo-Dravidian* as racial designations of different groups of people in India.

3. Discuss the value of the Cephalic Index as a criterion of race. Classify the peoples of Asia according to their head-form.

4. Write full ethnic notes on *any* of the following: Agnikulas (Rajput); Gurjaras; Neanderthal Man; Sinanthropus; Maori; Nesiots; Parocean; Nishāda; Toda.

5. Where do you think the evolution of Man took place? Discuss the question fully.

Second Half

*Examiner—DR. HEMCHANDRA RAY, M.A., PH.D.**Answer only THREE questions.*

1. Describe the system of *Kulinism* among the Brāhmanas and Kāyasthas of Bengal, and discuss the merits of the system.

2. What do you think was the origin of caste? Discuss some of the latest views on the subject.

3. Discuss the rules and prohibitions about marriage among the Hindus. Do you find polyandry prevalent in any part of India at the present day? Have you any reasons to think that it was in vogue in Ancient India?

4. Discuss how far the status of women in a society is a sure index of cultural advancement, giving illustrations as far as possible from India.

5. Write notes on *any five* of the following:—

Cross-cousin marriage; levirate; avunculate; matrilocal marriage; Talikettu ceremony; Totemism; Devadāsī.

(Group III.)
(Religious History.)

FIFTH PAPER.

The questions are of equal value.

First Half.

Examiner—DR. PRABODICHANDRA BAGCHI, M.A., D.LITT.

Answer ANY THREE of the following.

1. Describe the main characteristics of Vedic mythology.
2. Show how far Vedic religion has preserved elements of the ancient religion of the Indo-Iranian period.
3. Do you find any elements of a philosophy in the Rigveda?
4. Some scholars have characterized the Vedic religion as a sort of 'sympathetic magic'. How far is such an opinion justified?
5. Discuss what stages of development can be discovered in the religion of the Vedic period.

Second Half.

Examiner—DR. SITANATH PRADHAN, M.A., PH.D.

Only THREE questions are to be answered.

1. Briefly describe the attitude of Rigvedic Seers towards phallus-worshippers.
 2. State how far the sanctity of the cow was recognized by the Vedic Aryans. Discuss how far the eating of beef was allowed by socio-religious custom in Vedic times.
 3. Illustrate the truth of the statement:—
The physical appearance of some of the Rigvedic gods is anthropomorphic in a shadowy manner.
 4. Describe the main characteristics of the Rigvedic deities, the twin Aśvins. Do you consider them as two kings of yore?
 5. Write notes on *any four* of the following:—
Niskevalya Sastra, Satra, Puroḥāsa, Rta, Sūkta, Brāhmaṇa, Upaniṣat, Juhū.
-

(Group III.)

SIXTH PAPER

*The questions are of equal value.**Not more than THREE questions to be attempted from EACH half.*

First Half

Examiner—DR. HEMCHANDRA RAYCHAUDHURI, M.A., PH.D.

1. 'The chief Hindu gods are phenomenal.' How far is this remark true of the epic period ?

2. Write a critical note on the position of the solar deities in the epic. In what relation does the solar cult stand to the Bhāgavatas and the Pañcharātras in the Mahābhārata ?

3. Discuss the evolution of the cult of the mother-goddess in the great epic.

4. 'The epic has a god (Kṛishṇa), the *Upaniṣad* a man, and the means of connection are not apparent.'

(A. B. Keith.)

Critically examine this statement.

5. Write short notes on *any three* of the following :—

- (a) Prevalence of image-worship in the epic period ;
- (b) The 'feast of Indra' (*maha* or *utsava*) ;
- (c) Maṇibhadra ;
- (d) Brahmā ;
- (e) The immortal precepts (*amṛta padāni*) of the Besnagar Inscription ;
- (f) Date of the Gītā ;
- (g) Salient features of Vaishnavism in the Gupta period ;
- (h) The Pratyabhijñā School of Kāśmīra.

Second Half

Examiner—MR. JITENDRANATH BANERJEE, M.A.

6. 'In the opinion of several scholars the Bhakti religion centring round Vāsudeva was of foreign origin.' Examine this statement, and discuss in this connection the question of the indebtedness of Vaishnavism to Christianity.

7. Trace briefly the history of the rise and progress of Bhāgavatism from the fourth century B. C. to the end of the Scythian period.

8. Give a brief account of the main tenets of the Śrī Vaishṇava sect. Examine, in this connection, the nature of the indebtedness of the early Śrī Vaishṇava teachers to the pre-existing Viṣṇuīte literature of India.

9. Discuss the origin of the Pāśupāta sect, and point out the salient features of the Pāśupāta philosophy.

10. Give a brief account of the life and teaching of the Ālvārs and the Nāyanmārs (Bhaktas).

(Group III.)

SEVENTH PAPER

Examiners— { DR. NALINAKSHA DATTA, M.A., B.L., PH.D., D.LITT.
DR. BIMALCHANDRA LAW, M.A., PH.D.

The questions are of equal value.

Only six questions are to be attempted.

1. Critically discuss the importance of the principal sources from which our knowledge of Buddhism may be derived.

2. What part did the heretical teachers play in the history of early Buddhism ?

3. Discuss the historical significance of the Buddhist councils.

4. Discuss how far Asoka's Dhamma agrees with the doctrines of early Buddhism, and to what extent it is responsible for the transition of Hīnayāna to Mahāyāna.

5. Give a clear exposition of the doctrine of *trikāya* in Mahāyāna Buddhism.

6. Compare and contrast *Arhatship* and the state of a *Bodhisatta* as ideals of Buddhism.

7. Explain and exemplify the Buddhist view of *Pañiccasamuppāda*. Show how far this view is consistent with the idea of *Nirvāṇa*.

8. Write a short essay *either* on the Buddhist doctrine of *Karma* *or* the theory of Soul.

9. Point out the characteristic features of the Buddhist Saṅgha as distinguished from other similar organizations in ancient India.

10. Name the principal schools of early Buddhism, and state briefly their distinguishing doctrines.

11. Bring out the importance of Central Asia as a distributing centre of Buddhist culture.

12. Trace the history of the introduction of Buddhism into Tibet and China.

(Group III.)

EIGHTH PAPER :

Examiner—PROF. BENIMADHAB BARUA, M.A., D.LITT.

*The figures in the margin indicate full marks.**Attempt FIVE questions only, FOUR from the First Half and ONE from the Second Half.*

First Half

1. Determine the relative chronology of Mahāvīra, Buddha, and Gośāla. 13
2. A writer maintains that the doctrine of Gośāla is presupposed by the Jainism of Mahāvīra, while the doctrine of Mahāvīra is not presupposed by the teachings Gośāla.
Refute or justify. 13
3. Give a short sketch of the life of Mahāvīra, noting all points of historical importance. 13
4. As the Buddhists understood *āhara-siddhi* and *saṃsāra-siddhi* were the two main terms by which the doctrines of the Ājīvikas might be summed up.
Comment on this, giving your own opinion on the point at issue. 13
5. What are the nine principal terms of Jainism as a system of religion ? Briefly explain these terms, bringing out the bearing of each on Jainism. 13
6. What do the Jains mean by Saptabhaṅgi-naya or Pañcāstokāya ? Indicate the bearing of each on the Jain system of thought. 13
7. What was the social, religious, or philosophical atmosphere of India in which Jainism arose, and how did it react on the same ? 13
8. Prepare an outline of the history of Jain community, with special reference to the circumstances that led to divisions amongst them. 13
9. Estimate the value of Jain contributions to contemporary Indian civilization. 13
10. Determine the position of the Jains and the Ājīvikas under the Maurya rule. 13

Second Half

11. Write an essay on *one* of the following subjects :—

- (a) The importance of religion in Indian civilization. 48
- (b) The basic conception of Dharma. 48
- (c) The social and cultural background of Jainism and Buddhism 48
- (d) The fundamental unity of Indian faiths. 48

(Group V.)
(Anthropology.)

FIFTH PAPER

The questions are of equal value.

First Half

Eraminer—MR. HARANCHANDRA CHAKRADAR, M.A.

Only THREE questions are to be attempted.

1. Discuss the value of the cephalic index as a criterion of race. Show the distribution of the cephalic index in Europe.
2. Discuss the anthropological history of Germany.
3. Characterize the Pamirian race, and show its distribution in Asia.
4. Give an account of the probable waves of migration into India.
5. Who are the Prospectors and the Beaker-folk? Give a short account of their origin and distribution.

Second Half

Eraminer—MR. TARAKCHANDRA DAS, M.A.

Only THREE questions are to be attempted.

1. Analyze the various elements that make up the people of Melanesia.
 2. Specify the main types that make up the aboriginal population of North America.
 3. Characterize the Nilotic Negroes, and discuss their origin and migrations.
 4. Write ethnical notes on *any six* of the following :—
Tchuelche; Basque; Veddah; Semang; Abor; Negrillo; Lapp; Nēsiot; Tungus.
 5. Compare the African and Oceanic Negroid races.
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(Group V.)

SIXTH PAPER

The questions are of equal value.

First Half

Examiner—RAI BAHADUR SARATCHANDRA RAY, M.A., B.L.

Only THREE questions are to be attempted.

1. Discuss the origin of levirate. Are there any evidences to show that it was prevalent in ancient India?
2. Discuss whether the *sib* or the *family* is the earlier development in primitive social life.
3. What is totemism? Show its distribution in India. Discuss the different theories regarding its origin.
4. Describe some of the kinship usages among the Bengalis.
5. 'Primitive tribes are stratified by age distinctions, by differences of sex and of matrimonial status, and affiliation with one of the resulting groups may affect the individual's life far more powerfully than his sib membership.' (*Lowie*.) Illustrate by examples, wherever possible, from India.

Second Half

Examiner—MR. HARANCHANDRA CHAKLADAR, M.A.

Only THREE questions are to be attempted.

1. Discuss the position of women with regard to participation in religious ceremonies in primitive society. What is their position in this respect among the Hindus in India?
 2. What is animism? Discuss the influence of animism on Hindu religion, and the appropriateness of the term animism.
 3. Discuss the respective values of psychology and history in explaining the origin of religious phenomena, giving illustrations.
 4. Discuss the connection between magic and religion. Is there any element of magic in the Hindu methods of worship?
 5. Discuss the influence of ancestor-worship on the social and religious observances and the legal system of a people.
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(Group V.)

SEVENTH PAPER

Examiners— { RAI BAHADUR SARATCHANDRA RAY, M.A., B.L.,
DR. PANCHANAN MITRA, M.A., PH.D.

The questions are of equal value.

Only FIVE questions are to be attempted.

1. Give a brief account of the different stages of Palæolithic culture in Europe, indicating some correlated finds from India.
2. Briefly survey the art achievements and religious beliefs of the Late Palæolithic peoples.
3. What are the main types of Neolithic industry in Europe and India?
4. Indicate the prehistoric origins of agriculture and of domesticated animals.
5. Describe the principal achievements of the Indus-valley civilization.
6. Write a short account of the Early Bronze Age civilization in Western Europe.
7. Examine the distribution of dolmens in India and Europe, and discuss their origins.
8. Briefly describe the potteries of Anau, Susa, and Mohen-jo-daro, comparing them wherever possible.
9. Trace the movements of Nordics and Brachycephals in Europe prior to the Early Iron age.
10. Write short notes on *any four* of the following:—
Hallstatt, La Tene, Robenhausen, Capsian, Eolith, Menhir, Kitchen Middens, Gungeria finds, beakerfolk, Prospectorates.

(Group V.)

EIGHTH PAPER

Examiners— { MR. TARAKCHANDRA DAS, M.A.,
DR. PANCHANAN MITRA, M.A., PH.D.

The questions are of equal value.

Answer ANY FIVE questions.

1. Illustrate the primitive life of hunters from the Andamanese or the Veddas.
2. What ideas of the culture of a pastoral people do you get from the Todas?

3. Compare the methods of subsistence amongst the crude agriculturists of Chhota Nagpur with those of Assam.

4. What are the types of marriage found amongst the Birhors or Oraons.

5. What characteristic difference in kinship terminology could be observed amongst Birhors as compared with civilized peoples?

6. What was the social function of head-hunting amongst the Nagas?

7. What is exactly meant by clan-organization? Give illustrations from Chhota Nagpur or Assam.

8. Discuss the methods of village administration amongst the Birhors and Nagas, bringing out the respective functions of the headman and of the tribal council.

9. Write short notes on *any four* of the following :—

Cross-cousin marriage, levirate, sonorate, polyandry, hypergamy, exogamy, endogamy, dual division bride-price, gerontocracy, group-marriage.

10. What part did the worship of nature or of the dead play in the life of primitive peoples? Give Indian illustrations if possible.

ECONOMICS

FIRST PAPER.

(General Principles of Economics)

The questions are of equal value.

First Half

Examiner—MR. P. C. GHOSH, M.A., B.Sc.

Only THREE questions to be attempted from this half.

1. What is a factor of production? Is uncertainty-bearing a factor of production in the same sense as land, labour, and capital?

2. Discuss the Austrian doctrine of the 'natural' rate of interest, and examine Keynes' position with regard to it.

3. In what circumstances is a restriction on new workers entering an occupation likely to be advantageous to the economic welfare of the community as a whole?

4. If all land were of equal fertility and site value, in what circumstances, if any, would rent be paid for its use?

5. Discuss the risk theory of profit. Show how far it explains the nature of profit or the determination of its amount.

Second Half

Examiner—DR. R. M. CHAUDHURI, M.A., PH.D.

Answer ANY THREE questions.

1. 'Gold has depended, and will continue to depend, for its stability of value, not so much on the conditions of its supply, as on deliberate regulation of the demand.' Discuss this statement and indicate how the demand for gold may be regulated.

2. How far is it true to say that equilibrium in an international currency system requires that for each country its rate of foreign lending should be equal to its foreign balance?

3. Examine the view that the primary cause of cyclical fluctuations must be sought in changes in the volume of money which always bring about a falsification of the pricing process and thus a misdirection of production.

4. 'The gain from international trade will be greater the more the ratios of the costs of production in different countries differ.' Discuss this statement, and indicate the various circumstances upon which gains from international trade depend.

5. Are railway rates determined by the cost of service principle or the value of service principle? Compare these principles from the point of view of the National dividend.

SECOND PAPER

(General Principles of Political Science)

Answer THREE questions in EACH half.

First Half

Examiner—MR. D. CHATTORJA, M.A.

1. 'No other writer has the classical strength and sanity of Professor Green who was never more thorough or more at home than when dealing with those questions affecting citizenship in and for which, it may be said, he lived.' What idea of the rights and duties of a citizen do you gather from a study of Green?

2. 'There is no general will in the community at all.' Discuss Rousseau's General Will theory of sovereignty, and indicate why Laski dissents from Rousseau's view.

3. 'Nationalism from instinct became idea ; from idea, abstract principle ; then fervid prepossession ; ending where it is to-day in dogma, whether accepted or evaded.' Amplify.

4. 'Political democracy is impossible in a society without a certain amount of education.' What sort of education do you think necessary for democracy?

5. 'We must learn to think internationally or we perish.' Discuss the ideal of Internationalism, and note the importance of forces hostile to the ideal.

Second Half

Examiner—MR. W. WORDSWORTH, M.A.

1. 'Classical history is a part of modern history, it is only mediæval history that is ancient.' Discuss this statement, and show the analogy between government by discussion in the Greek city-state and government by public opinion in a modern democratic State.

2. 'Democracy arises at times of common energy, when the average man is eager to think and decide, and collapses in times of general fatigue, when the average man feels that the business of thinking, deciding, and then watching the men of his choice is not worth while.'

Discuss this view, with reference to the circumstances of Europe to-day.

3. 'The national State rescued the world from the monotony of the universal empire.'

Elaborate the implications of this statement.

4. In what ways has the Great War of 1914-1918 affected the world's political thought?

5. 'Not only does the personality of man refuse to be summed up under a single social relationship; it is not wholly revealed as the total of a series of social relationships.'

Examine the importance of this truth for political development in India.

THIRD PAPER

(Public Administration)

The questions are of equal value.

First Half

Examiner—MR. S. C. CHAKRABARTI, M.A.

Answer ANY THREE questions.

1. Discuss the effect of the Statute of Westminster upon the legislative competence of the British Self-governing Dominions. 'The Statute has been very carefully drafted to preserve the theoretical right of the British Parliament to legislate for the whole of the British Empire.' Comment on this statement.

2. 'The executive in the Swiss Government is unique.' Discuss. To what extent does ministerial responsibility exist in Switzerland?

3. Write a note on the Emergency powers of the German President under Article 48 of the Weimar Constitution. To what extent have these powers been used since the inception of the Weimar Republic? Indicate the constitutional position of the present Nazi Government in Germany.

4. Describe and comment upon the delegated powers of departments in Great Britain.

5. Write a note on the privileges of the House of Commons. How far are they conducive to the dignity and efficiency of Parliament?

Second Half

Examiner—MR. D. N. BANERJEE, M.A.

Answer ANY THREE questions.

1. Under the Morley-Minto Reforms of 1909 'the argument of numbers remained with the Central Government.' Examine this statement, and discuss in this connection the salient features of those Reforms.

2. To what extent has the Government of India Act provided for executive legislation in India? Do you think there should be any provision for such legislation in the future constitution of this country? Give reasons for your answer.

3. Discuss the nature of the existing central control over provincial matters in India. How far is this control compatible with the growth of provincial autonomy in this country?

4. Discuss the constitution, nature, and powers of the Federal Executive as proposed in the White Paper on Indian Constitutional Reform (1933).

5. Describe the present position of the Indian States in relation to the Paramount Power, and discuss in this connection the recent proposals of His Majesty's Government for incorporating them in a Federation of India.

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FOURTH PAPER

(Public Finance)

The questions are of equal value.

First Half

Examiner—DR. J. P. NIYOGI, M.A., PH.D.

Answer ANY THREE questions.

1. Critically examine some of the theories which have been advanced in justification of progressive taxes.

2. Discuss the probable incidence and economic effect of a heavy *ad valorem* duty on share capital of all joint stock companies.

3. Do you consider it desirable and practicable to subject casual gains to income tax? Illustrate your answer from British and American practice.

4. In what circumstances, if any, is the issue of a Government loan below par justified?

5. 'A government increases the burden on future generations in so far as it raises money by loans instead of taxes.'

Discuss this statement.

Second Half

Examiner—MR. S. C. RAY, M.A.

Answer THREE questions only.

1. Differentiate between the characteristics of (1) Public Finance, and (2) Private Finance. State whether the finances of the following bodies come under *public or private* finances:—

(a) A Village Co-operative Credit Society.

(b) A Village Union.

(c) Estate of Maharaja Nandi under the Court of Wards.

(d) A School or a Dispensary established by public subscriptions and private donations and under purely private management.

(e) The Burdwan Raj.

(f) The Mysore State.

2. Analyze the nature of the Famine taxes imposed in 1877. What was the incidence of these taxes on the Provinces? Why was the incidence unequal?

Trace the change of policy of financing famines since 1877.

3. Distinguish between *Capital* and *Revenue* expenditure. Illustrate by a figured statement the main heads of Capital and Revenue of Indian Railways.

Give the reasons for separating Railway Finance from the General finances of the Government of India.

Define (1) Depreciation Fund, (2) Sinking Fund, and (3) Reserve Fund.

4. It is said that the provincial revenue and expenditure were separated from Imperial not according to their nature, but according to an arbitrary method. Explain this by giving examples.

Briefly differentiate between the main features of the provincial financial system before and after the Reforms of 1919.

5. Analyze the factors that should be taken into account in calculating the financial effect of the abrogating of the Permanent Settlement of Land Revenue in Bengal.

Suggest a scheme by which the Permanent Settlement can be done away with without doing violence to the pledge given by the State and the vested interests of the landlords and intermediate tenants.

FIFTH PAPER
(Indian Economics.)

The questions are of equal value.

First Half

Examiner—MR. B. G. KALE.

Attempt only THREE questions.

1. Examine critically the following two views of the Bengal Zemindari settlement, viz. that (1) it represented the application of British custom and sentiment to unsuitable conditions in India, and that (2) it was not inspired by any theory or sentiment and was dictated mainly by considerations of expediency.
2. Discuss the fiscal, economic, and social consequences of the Permanent Settlement.
3. Compare the Bengal Zemindari settlement with the pre-British system of land revenue, and account for the differences between the two.
4. Trace the chief stages in the growth of tenancy legislation in Bengal. What classes of tenants does it protect, and how is that protection justified?
5. What are the different interests which are affected by land revenue policy? Compare the position in Bengal in this connection with the position in the other Provinces of India.

Second Half

Examiner—DR. H. L. DE, M.A., PH.D.

Answer ANY THREE questions. The questions are of equal value.

1. Indicate the scope and explain the importance of cottage industries in India. What do you consider to be the best methods of State assistance to the cottage industries?
2. Narrate the history of the Indian Iron and Steel Industry. What are its present condition and future prospects?
3. Discuss the part played by the Managing Agency System in the development of Indian industries. What are its present shortcomings?
4. Briefly trace the evolution of Factory Legislation in India, and indicate the main defects in existing legislation.
5. Describe the chief features of the Indian Trade Dispute Act. What improvements would you suggest in the light of recent experience?

(Group A)

SIXTH PAPER

(History of Economic Thought)*The questions are of equal value.***First Half***Examiner*—DR. J. C. SINHA, M.A., PH.D.*Answer ANY THREE questions.*

1. Estimate the influence of the Christian Church on economic thought during the Middle Ages.
2. Discuss the influence of the Physiocrats on the writings of Adam Smith.
3. Discuss the place of Bastiat and J. S. Mill in the development of economic thought.
4. Indicate the special contributions of German writers to the development of economic thought during the 19th century.
5. 'The concept of rent has been generalized so that it can no longer be regarded as a curiosity or an anomaly.' (Rist.)
Discuss this statement.

Second Half*Examiner*—MR. BIJAYKUMAR SARKAR, A.B.*Answer ANY THREE questions.*

6. Account for the rapid progress of the British cotton industry during the first half of the nineteenth century. Do you agree with the view that the foundation of this industry was laid under a system of high protection?
 7. Examine critically the financial policy of William Pitt.
 8. Trace the origin of trade unionism in England. Describe its chief features from its inception down to 1834.
 9. Outline the history of the co-operative store movement in England during the latter half of the nineteenth century, and indicate the nature of the problems which have confronted the movement since the beginning of the present century.
 10. In what directions, and owing to what causes, was there a reaction in England during the latter half of the nineteenth century against the policy of *laissez faire*?
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(Group A.)

SEVENTH PAPER

(Banking and Currency)

The questions are of equal value.

First Half

Examiner—DR. B. RAMCHANDRA RAU, M.A., PH.D.

Answer ANY THREE questions.

1. Explain the significance of gold exports from a country. Should the Government of India check the exportation of gold from this country? If so, how?

2. What led to the American banking crisis in 1933? How did President Roosevelt meet the situation? Discuss the position of the F. R. Banking system in this connection.

3. Discuss the truth underlying the statement that 'modern banks do not create credit'. How do banks classify deposits? Mention the significance of this classification.

4. Give a brief sketch of the German banking organization, and consider in this connection the position of the Reichsbank in detail.

5. Point out the main trend of changes in commercial banking. How, in your opinion, could the situation of the Indian Joint Stock Banks be improved?

Second Half

Examiner—DR. L. C. JAIN, M.A., LL.D., D.Sc.

Answer ANY THREE questions.

1. 'In truth the gold standard is already a barbarous relic.' Do you agree? Give reasons for your answer.

2. 'In our present debt-ridden conditions, 1929-33, we don't want more credit, but better credit.' Discuss with reference to conditions in India.

3. 'Competition between nations by currency depreciation is unintelligent, reckless, and leads to nothing but ruin.' Expound and comment.

4. Discuss with reference to Indian conditions the difficulties with which the Reserve Bank for India may be confronted in attempting to control the volume of credit.

5. Illustrate from Indian experience the disadvantages, economic and political, of entrusting the responsibility for the management of the currency to the State.

(Group A.)

EIGHTH PAPER

(Banking and Currency)

The questions are of equal value.

First Half

Examiner—DR. J. C. SINHA, M.A., PH.D.

Answer ANY THREE questions.

1. 'Any index number which embraces a fairly wide range of independent price quotations must work out in practice to much the same results as any other.'

Examine this view.

2. Discuss the main difficulties in the way of defining Money.

3. 'Cassel's applications of his Purchasing Power Parity theory to current events is vitiated by his underlying assumption that the terms of trade do not change.' Discuss this statement.

4. Examine the validity of the view that 'the trade cycle is a purely monetary phenomenon'.

5. Discuss the nature and merits of the formulation of the Quantity theory of money *either* by (a) Fisher *or* (b) Keynes.

Second Half

Examiner—SIR J. C. COYAJEE, KT., B.A., LL.B.

Answer ANY THREE questions.

6. Examine the relative merits and defects of the chief methods for the regulation of note issue. What, in your opinion, is the right method of note issue in India?

7. Examine the chief objections of the Hilton Young Commission to the metallic rupee. Do you agree with the view that 'the whole of the exchange trouble of India during the War seems to have hinged upon the decision to retain the coined rupee'?

8. Examine the part played by the Gold Exchange Standard in post-war monetary arrangements. What, in your opinion, is the future of that standard?

9. How far was the departure of India from the silver standard in 1893 justified? Would you advocate the introduction of bimetallism into India at the present day?

10. How far is the depreciation of foreign exchanges of a country advantageous to it? Illustrate your answer by considering the potentialities of the policy of devaluation of the rupee.

Group A.)
SEVENTH PAPER
(International Trade)

The questions are of equal value.

First Half

Examiner—MR. D. N. GHOSH, M.A.

Answer ANY THREE questions.

1. Discuss the merits and demerits of 'Exchange Depreciation' as a method of promoting a country's foreign trade.
2. 'The inadequacy of the Richardian theory of Comparative Costs becomes apparent when we have to deal with cases in which more than two countries and more than two commodities are involved.' Discuss this statement fully, and indicate some solution of the difficulty.
3. 'As between two countries, trading with each other and the one more efficient than the other, the price level of domestic goods is likely to be higher in the former than in the latter.' Elaborate this statement.
4. Examine the following statement: 'A change in its real ratio of international exchange is always a bad indication *by itself* of improvement or deterioration in the foreign trade position of a country.' What other factor or factors should be taken into consideration for this purpose?
5. 'It is the difference between gold export and import points that allows short rates of interest to be at different levels in centres on the same currency standard.' Elaborate this statement.

Second Half

Examiner—MR. P. CHAKRABARTI, M.A.

Answer ANY THREE questions.

1. Compare the effects of export bounties and of import duties on (a) the terms of trade, and (b) domestic prices and incomes.
 2. Would Protection be beneficial to raw material producing countries?
 3. Analyze the effects of the flow of specie in restoring international equilibrium, with special reference to a lending country.
 4. Discuss (a) the influence of the size of a country, and (b) the effect of an improvement in making exported goods, on her gain from foreign trade.
 5. Explain carefully the conditions under which the Purchasing Power Parity Theory would hold true.
-

(Group A)

EIGHTH PAPER

(International Trade)

The questions are of equal value.

First Half

*Examiner—DR. J. P. NIYOGI, M.A., PH.D.**Answer ANY THREE questions.*

1. Give the main provisions of the Indo-Japanese trade agreement of 1934, and discuss its probable effect from the standpoint of India.

2. 'There may often be valid economic grounds for forcing domestic prices down to the level of export prices and thus eliminating dumping, but there can rarely be valid grounds for eliminating export dumping by forcing export prices up to the domestic level.'

Comment on this statement.

3. Examine the basic idea of the system of compensatory trade. Show how far this idea is realized in practice.

4. Outline the tariff history of the U.S.A. from 1798 to 1828. Discuss the causes which led to a change in commercial policy after this period.

5. 'The use of bargaining tariff systems and commercial treaties seems to make for moderation and reasonableness in tariff matters.'

Examine this statement, with reference to tariff history.

Second Half

*Examiner—DR. K. B. SAHA, M.A., PH.D.**Answer ANY THREE questions.*

1. How far is it true to say that tariffs reduce domestic costs of production by promoting rationalization and large scale production?

2. 'The very essence of the Most Favoured Nation Clause lies in its exclusion of every sort of discrimination, whereas the conditional clause constitutes by its very nature a method of discrimination; it does not offer any of the advantages of the M.F.N. Clause proper, which seeks to eliminate conflicts, to simplify international trade, and to establish it on firmer foundations.'

Comment on the statement.

3. Examine the effect of financial exigencies on fiscal policy in the light of the tariff history of the U.S.A., Germany, and India.

4. By what tests would you determine the success of protection given to infant industries? How far are these tests satisfied by the protection given to the steel industry in the U.S.A.?

5. Give a short account of the protection given to the Indian cotton textile industry. How far has this protection been justified by the circumstances of the case?

(Group A.)

(Statistics—First Paper.)

SEVENTH PAPER

The questions are of equal value.

ANY SIX questions carry full marks.

First Half

Examiner—DR. S. N. GANGULI, D.Sc.

1. Give a short account of the chief official publications in India relating to statistics of foreign trade and industry.

2. Supposing that statistics of rents of working-class dwellings have been collected in a certain mill-area for a series of years, describe some method of forming an index number, showing the changes in rents from year to year during the period. Give reasons for the process you adopt, or state any advantages it appears to you to possess.

3. Define 'coefficient of correlation'. Establish a formula for computing the coefficient of correlation, and state its principal uses.

If the correlation-coefficient between two variables is zero, can you infer that they are necessarily independent?

4. What are the three chief methods of determining the national income of a country? Which method is suitable for India, and why?

5. Assuming that the frequencies of values 0, 1, 2, 3, . . . of a variable are given by the terms of the binomial series

$$\frac{n(n-1)}{1.2} q^{n-2} p^2, \dots$$

Where $p+q=1$, find the mean and the standard deviation.

Second Half

Examiner—MR. H. C. SINHA.

6. Set out in detail the method by which you would propose to make graphic comparison of two such series of figures as rainfall and mortality in India.

7. The following are the Annual Premiums required to secure at death Rs.1,000 under the Whole Life Policies of a certain Assurance Company:—

Age next birthday in year	Annual Premiums in Rupees
25	
30	28
35	30
40	35
45	42
50	

Compute by any method of your choice what the Premium would be at age 38 next birthday.

8. What methods are available for classifying frequency curves into types? State briefly the mathematical concepts underlying the Pearsonian classification of frequency curves.

9. Describe briefly the various attempts which have been made for preparing a Census of Production in the 'United Kingdom' and 'the United States of America'. What suggestions can you offer for framing a scheme of the Census of Production for India?

10. The number of births by sexes in Denmark for the designated quinquennial periods were as follows:—

		Female.	Male.
1860-4	...	130,089	138,289
1865-9	...	135,324	142,828
1870-4	...	139,733	148,360
1875-9	...	154,214	162,823

Determine whether the deviations of the number of males from the number determined by the average ratio of males to females are to be expected.

(Group A.)
(Statistics—Second Paper.)

EIGHTH PAPER

The questions are of equal value.

Answer ANY THREE questions from EACH half.

First Half

Examiner—DR. S. N. GANGULI, D.Sc.

1. Define (a) arithmetical average, (b) geometrical average, (c) median, (d) mode, (e) quartile.

Discuss their advantages and disadvantages and instance cases when (b) and (d) are specially appropriate.

2. Construct a blank table, complete with headings and lines, and with due regard to spacing, in which could be inserted the output of coal, the number of persons employed, and their aggregate and average earnings in each four weekly period in 1932 and 1933.

3. What in your opinion would be a satisfactory method of constructing an index of production for the country? How far is it possible at present to obtain the detailed information needed as a basis for your calculation?

4. Given the death rates per 100,000 population in the registration area of the United States by years for the following diseases:—

		Typhoid.	Tuberculosis.	Cancer.
1906	...	31.3	157.1	69.1
1909	...	21.1	139.3	73.8
1912	...	16.5	129.8	77.0
1915	...	12.4	127.7	81.1

Estimate the death rates for the year 1913 by Newton's formula.

5. Explain the meaning and use of *moving averages* in Statistics.

Second Half

Examiner—MR. H. C. SINHA.

6. Write a short note on the different steps in the collection of wage statistics for the industrial population in Bengal.

7. What methods are available for testing the 'goodness of fit' of a mathematical curve to observations?

The following table gives corresponding values of x and y :—

$x = 1.00, 1.50, 2.00, 2.30, 2.50.$

$y = .65, 1.05, 1.45, 1.60, 2.85.$

Test if there is a relation between x and y of the type

$$y = a + bx^2.$$

8. A sample containing 1,000 is drawn at random from a large universe, and 300 are found to possess a certain attribute. Can you infer anything as to the proportion in the universe that have this attribute, or what further information is needed?

9. What is 'logistic curve'? What is its use in a study of the growth of population?

10. For what purposes do we sometimes want to 'standardize' birth-rates? How can such standardized birth-rates be formed?

(Group A.)

SEVENTH PAPER

Examiner—MR. P. C. GHOSH, M.A., B.Sc.

(Mathematical Economics.)

The questions are of equal value.

Only THREE questions to be attempted from EACH half.

First Half

1. Point out the chief features of the integral demand curve. Give an expression for the elasticity of demand in terms of total price and the amount, and show how this may be measured graphically on the demand curve.

2. Assume the form of the zero indifference curve (U_0), and show how the other indifference curves are related to it when the marginal utility of money (1) is constant, (2) is not constant.

3. What is a Contract-curve? Deduce an equation for the contract-curve when there are only two persons present in the bargain with only two commodities.

4. Discuss how utility is measurable by money.

5. Explain why a constant net utility curve of exchange is concave to the axis of acquisition.

Second Half

6. Examine the factors on which the amount of rent of a piece of land depends. How do improvements in the method of cultivation affect (1) its absolute rent, and (2) rent per unit of outlay?

7. Investigate, in Edgeworth's manner, the immediate effect of (1) impediments (other than taxes) on imports, and of (2) taxes on exports, upon the net advantages of foreign trade.

8. Carefully explain what you mean by 'Joint Cost' and 'Increasing Returns'. Show that they are two distinct conceptions mathematically, and explain why in railways they are often found together.

9. A tax is imposed in proportion to the selling price of a commodity. Discuss its effects upon the price and output (a) when the commodity is subject to monopoly, (b) when its supply is open to unlimited competition.

10. Show that the remuneration of the different agents of production according to their marginal productivity exhausts the National Dividend. Indicate carefully the economic significance of the mathematical assumptions involved in the statement.

(Group A.)

EIGHTH PAPER

(Mathematical Economics.)

The questions are of equal value.

Answer ANY THREE questions from EACH half.

First Half

Examiner—MR. H. C. GHOSH, M.A.

1. State and explain Jevons' Theory of Exchange.
2. How far is it possible for increasing returns to prevail in any industry without leading to the monopolization of the whole market by a single producer?
3. Point out the relation between the Elasticity of Demand and the Expansivity of Demand for a commodity.

The measure of the elasticity of demand is 2: show that the proportion in which the amount demanded should increase in consequence of a small fall in price would vary inversely as the cube of the price.

4. How would you proceed to determine 'Settlement Locus', when account is taken of the fact that the marginal utility of money to the workmen varies with the amount of it that they have and also of the disutility of work?

5. 'The origin of interest is not the difference between the value of present and prospective commodities.' Comment.

Second Half

Examiner—MR. P. C. GHOSH, M.A., B.Sc.

6. Distinguish carefully between Marshall's Representative Firm and Pigou's Equilibrium Firm. Which do you think to be more useful, and why?

7. How would you measure the national dividend of a community?
8. Critically examine Pareto's Law of distribution of wealth.
9. How far is it possible to determine the effect upon price of imposing a tax upon one of two sources of supply and distributing the proceeds as a bounty to the output from the other sources?
10. How would you expect the international distribution of industries and the economic profit of the world to be affected if transportation between different countries (a) of goods alone, (b) of people alone, (c) of both goods and people was furnished at the expense of tax-payers in general?

(Group B.)

SIXTH PAPER

(History of Political Thought.)

The questions are of equal value.

First Half

Examiner—MR. B. N. BANERJEE, M.A.

Answer Question 1 and TWO others.

1. Comment on *any three* of the following:—

(a) 'And surely, said I, if once a Republic is set a-going, it proceeds happily, increasing as a circle. And whilst good education and nurture are preserved, they produce good geniuses, partaking of such education, produce still better than the former, as well in other respects, as with reference to propagation, as in the case of other animals.' (Plato.)

(b) 'Here then, said I, for I say that what is just is nothing else but the advantage of the more powerful.' (Plato.)

(c) 'Unless either philosophers, said I, govern in cities, or those who are at present called kings and governors philosophize really and thoroughly, and these two, the political power and philosophy, unite in one, and till the bulk of those who at present pursue each of these separately are of necessity excluded, there shall be no end, Glauco, to the miseries of cities, nor yet, as I imagine, to those of the human race; nor till then shall ever this republic, which we have gone over in our reasonings, spring up to a possibility, and behold the light of the sun.' (Plato.)

(d) 'In common use they define a citizen to be one who is sprung from citizens on both sides, not on the father's and mother's only.' (Aristotle.)

(e) 'Besides, no one ought to think that any citizen belongs to him in particular, but to the State in general; for each one is a part of the State, and it is the natural duty of each part to regard the good of the whole: and for this Lacedæmonians may be praised;', (Aristotle.)

(f) 'The principle that the multitude ought to be supreme rather than the few best is capable of a satisfactory explanation, and though not free from difficulties, yet seems to contain an element of truth.'
(Aristotle.)

2. Indicate the place of the Sophists and the Epicureans in the history of Greek political thought.

3. Explain fully the Platonic and Aristotelian attitude towards private property.

4. 'We shall give a fairly comprehensive description of what the Republic is about if we say that it is an attempt to show the superiority of justice to injustice by a description of the philosophic life.' (Lindsay.) Discuss.

5. Critically discuss Aristotle's conception of law in the light of modern theory.

Second Half

Examiner—MR. N. C. BHATTACHARYYA, M.A.

Answer ANY THREE questions.

1. What are the sources of medieval political thought? Trace, in general, the chief influences of each of them on the development of political theory in the Middle Ages.

2. Write a critical note on the political teachings of Wycliffe. How far was the political and social unrest in the latter part of the 14th century in England reflected in his writings?

3. Comment critically on the following:—

'With us there is great justice, because that war is just which is necessary, and arms are hallowed when there is no other hope but in them.' (Machiavelli.)

4. Trace the history of the theory of separation of powers from the earliest times down to the present day.

5. 'The only way to erect such a common power . . . is to confer all their power and strength upon one man, or upon one assembly of men, that may reduce all their wills by a plurality of voices unto one will; which is as much as to say, to appoint one man or assembly of men to bear their person; . . .'(Hobbes.)

'At once in place of the individual personality of each contracting party, this act of association creates a moral and collective body, composed of as many members as the assembly contain votes, and receiving from this act, its unity, its common identity, its life, and its will.'
(Rousseau.)

Compare and contrast the theory of State and sovereignty contained in the above quotations.

(Group B.)

SEVENTH PAPER

(Comparative Politics.)

The questions are of equal value.

Not more than SIX questions to be attempted: THREE from EACH half.

First Half

Examiner—MR. P. N. BANERJEE, M.A., B.L., BAR-AT-LAW.

1. 'The one thoroughly successful institution which has been established since the tide of modern democracy began to run is the American Senate.' (*Maine.*)

Discuss.

2. How far does the constitution of Canada diverge from a normal federal type?

3. How does the Statute of Westminster, 1931, improve the autonomous status of the Dominions?

4. 'Parties are inevitable . . . No one has shown how representative government can be worked without them.' (*Bryce.*) Do you agree?

5. Compare the House of Commons and the House of Representatives as deliberative bodies.

Second Half

Examiner—MR. W. C. WORDSWORTH, M.A.

1. Distinguish between protectorates and British mandatory territories. How do they differ from Crown colonies?

2. 'All that was best in Rome died under the Empire.'
Examine this statement with reference to political institutions.

3. Write a brief essay on the position of the King in ancient India, giving particular attention to any influences and institutions that limited his power.

4. What justification do you find for the existence of Dyarchy as a system of government in India?

5. Give a brief account of the political institutions of *either* Switzerland *or* the Union of Socialist Soviet Republics.

(Group B.)

• EIGHTH PAPER

(Comparative Politics.)*The questions are of equal value.***First Half***Examiner—DR. U. N. GHOSHAL, M.A., PH.D.**Answer ANY THREE questions.*

1. In what sense does imitation serve as a disturbing factor in the sphere of Comparative Politics? What scope is there for the application of the Deductive Method in this science?
2. Contrast the methods of judicial administration in the Athenian and the Roman polity.
3. 'Legislation in Athens was a work of co-operation between the two great popular bodies, the ecclesia and the heliaca.' Justify this statement, and indicate its constitutional significance.
4. Examine the relations between Law and Government in the Ancient polity.
5. Distinguish the essential from the incidental features of feudalism. Consider in what circumstances feudalism might be a desirable form of polity.

Second Half*Examiner—MR. D. CHATTORAJ, M.A.**Answer ANY THREE questions.*

1. Compare and contrast the 'Ideal State' of Plato with that of Aristotle.
 2. Write a short note on the organization of Roman Provinces during the Republican period.
 3. Briefly indicate the general character of medieval cities. Illustrate your answer, with special reference to Lombardy.
 4. Discuss the nature of Greek tyrannies. Do you find any resemblance between these and the tyrannies in Medieval Italian cities?
 5. What idea of 'Dandaniti' do you gather from a study of Kautilya's 'Arthashastra'?
- Compare this law of punishment with Green's Theory.
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(Group B.)

SEVENTH PAPER

(Sociology.)

The questions are of equal value.

First Half

Examiner—MR. BINAYKUMAR SARKAR, M.A.

Answer ANY THREE questions.

1. (a) What light do international statistics throw on the infant mortality rates in the different Indian provinces?

(b) Describe the status of immigrants in the U.S.A. and of Indians in East Africa.

2. (a) Estimate the position of the aboriginal tribes in the social economy of Bengal.

(b) Point out the marks of difference *either* between Tarde and Ratzenhofer *or* between Bhudev and Ramendra Sundar in an analysis of the contributions of each to social thought.

3. (a) Indicate the more important features in the recommendations of the Indian Jails Committee.

(b) Discuss the economic importance of women with reference to existing conditions in India or Europe.

4. (a) Explain *any four* of the following terms:—

born criminal, unemployment insurance, school hygiene, amentia, workmen's compensation, parole, assisted emigration, recidivist, after-care association, housing problem.

(b) Examine the influence of labour legislation on the standard of living of the people.

5. (a) Discuss the academic status of the secondary schools in Bengal in the light of British or Continental educational institutions.

(b) Write notes on *any three*:—

(1) Borstal System, (2) Organization of Public Health in Bengal, (3) Accident Insurance in Germany, (4) Social Service Activities of the Ramkrishna Mission, (5) Large Family Movement.

Second Half

Examiner—DR. RADHAKAMAL MOOKERJEE, M.A., PH.D.

Answer ANY THREE questions.

1. Discuss fully the causes of disparity of growth in numbers of different communities in Bengal. Why is this leading to a cultural unbalance? What social situation do you envisage for the future, especially in the east?

2. In what respects have the effects of industrialism on family and home life been more disruptive in India or Japan than in the West? Discuss, by way of contrast, the causes of large commensal families in Northern and Eastern Bengal.

3. Examine and illustrate the gradual transformation of an aboriginal tribe into caste. Point out the social, economic, and cultural implications of this process.

4. From an analysis of marriage rituals and observances, distinguish between the lower aboriginal and higher cultural elements, and discuss the relative influences of magic and religion in strengthening marital bond.

5. Illustrate how economic progress often furnishes a clue to the gradation of the lower Hindu castes. Mention any instances you are familiar with of caste fission due to economic advance.

6. Illustrate the influence of a crowd upon its members from *either* (a) a religious *Sankirtan*, or (b) a political mass demonstration. Is it a sort of societal 'fountain of youth', the source of religious or political rejuvenation?

(Group B.)

(Sociology—Second Paper.)

EIGHTH PAPER

Examiner—MR. K. N. SEN, M.A.

The questions are of equal value.

First Half.

Only THREE questions are to be answered.

1. What are the elements of value in the eugenic approach to the study of social problems?

2. Discuss the extent of the recognition of the right of private property among primitive peoples.

3. Analyze the nature and content of the social mind. How far is it possible to regard it as a super-personal entity?

4. What is a totem? How is totemism related to exogamy? Explain your answer with special reference to Indian examples.

5. Explain the significance of the Classificatory System of Relationships and its bearing on the problems of primitive sociology.

Second Half.

Only THREE questions are to be answered.

1. Write a short essay on the socio-economic aspects of the caste system. What are the sociological bearings of the problem of the 'Exterior Castes' in India?
 2. Discuss historically the main types of the family from ancient times down to the present, indicating carefully the position of women in it.
 3. Discuss the various forms of primitive supernaturalism and their survival in modern times.
 4. Give a short account of the organization of the Santals, with special reference to their beliefs and practices.
 5. What racial admixtures do you find in the social polity and culture of India? Discuss the question with special reference to Bengal.
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(Group B.)

(International Law.)

SEVENTH PAPER.

The questions are of equal value.

Attempt SIX questions in ALL: THREE from EACH half.

First Half.

Examiner—MR. P. N. BANERJEE, M.A., B.L., BAR-AT-LAW.

1. Assess the contributions of (i) the positivists, (ii) the naturalists, (iii) the Grotians, to the development of International Law.
2. Discuss the merits and demerits of codification of the rules of International Law. What attempts have been made so far to codify them?
3. 'The Assembly of the League of Nations is tending to become the general directing force of the activities of the League while the Council is operating as its executive organ.' (*Oppenheim*). Discuss with reference to (a) the composition, (b) the functions, (c) the activities of both.
4. What is the position of the following in International Law?—
(a) Soudan, (b) the republic of San Marino, (c) Iraq, (d) the free city of Danzing.
5. Write a short note on the succession of International persons.

Second Half.

Examiner—MR. N. C. CHATTERJEE, M.A., B.L., BAR-AT-LAW.

N.B.—*Attempt ANY THREE questions.*

6. 'All cases of pacific blockade are cases either of intervention or reprisal.' Illustrate.

7. Clearly state by giving examples the diplomatic immunities enjoyed by Ambassadors. Do Judges of the Permanent Court of International Justice enjoy such privileges?

8. How far does the outbreak of war ipso facto cancel all treaties between the belligerents?

9. Write a short note on unneutral service.

10. Discuss the principles of law involved in *any three* of the following:—

- (a) *Porter v. Freudenberg* (1915) 1 K.B. 857.
- (b) *In Re Ferdinand, Ex-Tsar of Bulgaria* (1921) 1 Ch. 107.
- (c) *The Ariel* (11 Moo. P.C. 119).
- (d) *The Zamora* (1916) A.C. 77.

(Group B)

EIGHTH PAPER

(International Law)

The questions are of equal value.

Answer SIX questions in ALL: THREE from EACH half.

First Half.

Examiner—MR. S. C. CHAKRABARTI, M.A.

1. Trace the history of the rules concerning enemy goods in neutral ships, and indicate clearly the state of the law on the point.

2. What are the duties of the League of Nations in case of a threat of war among its members? Write a short note on the League's powers of coercion under article 16 of the covenant.

3. How is the enemy character of corporations determined in time of war? Illustrate by reference to leading cases.

4. To what extent are High Seas free in time of war? Discuss with reference to the controversy raised during the Great War.

5. Write notes on *any three* of the following:—

- (a) *The Rothersand*, (b) *The Kim*, (c) *The Miramichi*, (d) *The Appam*, (e) *Janson v. Driefontein Consolidated Mines, Ltd.*

Second Half.

Examiner—MR. P. N. BANERJEE, M.A., B.L., BAR-AT-LAW.

N.B.—*Answer ANY THREE questions.*

6. Discuss the validity of the following acts:—

- (a) Brussels was fined 500,000 francs by the Germans during the Great War for the murder of a German soldier by an unknown person.
- (b) From a city in France 50 girls were drawn by the Germans, during their occupation of the French territory, during the Great War, and were detailed to act as orderlies of German officers.
- (c) Japan commenced hostilities against China with reference to Manchuria without declaration of war.
- (d) Submarines were strewn broadcast in the territorial waters of China by Japan at the time of war.

7. (a) In what circumstances does a converted merchant-man acquire the status of a warship?

(b) What would be the fate of neutral goods under an enemy flag?

(c) How will belligerent warships in neutral waters be treated by the neutral power concerned with reference to (i) repairs, (ii) supply of coal and provisions, (iii) supply of arms and ammunition?

8. 'War must support war.' Is this doctrine admissible in International Law? What attempt was made to enforce it during the Great War?

9. Answer *any two* of the following:—

(a) In a war between England and France, *M*, a partner in a house of trade in New York, went to France in 1794 to dispose of the cargo of a vessel. He continued to live in France till 1796, acting on behalf of the said American firm. Is his cargo liable to capture on the High Seas by England?

(b) Has a State in belligerent occupation the right to claim hostages for securing the obedience of the people under occupation?

(c) Can a military occupant interfere with educational institutions or establish Special Tribunals?

(d) Is postal correspondence of a belligerent found on high seas on board an enemy ship liable to seizure or destruction? Would your answer be different if such correspondence is found on board a neutral ship? What would be the consequence if the neutral ship is found violating a blockade?

10. What is the modern law relating to the use of (a) submarines, (b) poison gas? Discuss briefly the validity of the 'submarine blockade' of the British Isles by Germany during the Great War.

MENTAL AND MORAL PHILOSOPHY.

FIRST PAPER

(History of Ancient and Mediaeval European Philosophy.)

The questions are of equal value.

First Half.

Examiner—PROF. J. R. BANERJEE, M.A., B.L.

N.B.—Answer ANY THREE questions.

Full Marks—50.

1. Give the substance of Anaximander's philosophy, explain it, and criticize it fully. It has been said that he seems to have been the first thinker who recognized the power and significance of the negative. Examine this. Is Anaximenes's philosophy really an advance on Anaximander's? Give reasons for your answer.

Or,

What are the sources of our knowledge of Pythagoreanism? Give a summary of the doctrines of the Pythagoreans, noticing specially what they say about *mihton*, *monas*, and *aóristos duás*. Examine Pythagoreanism, and show that the speculations of the Eleatics rose into a higher region of abstraction or pure thought than those of the Pythagoreans.

2. Discuss the question of the place of the Atomists in the history of Greek philosophy. Compare their teaching with that of (a) the Eleatics, and (b) Heraclitus. Give an account of the Atomic philosophy, noticing the points of interest in it, and examine it. Briefly compare the teaching of the Atomists with that of the *Cárudka system*.

3. Exhibit the historical importance of the Sophists. Examine their psychological and ethical doctrines.

Or,

What were the influences exerted on Socrates's philosophical development? • 'Socrates called philosophy down from the heavens to earth, and introduced it into the cities and houses of men'. Fully explain this, and give an account of his ethical doctrines. Examine the latter.

4. In what respects does Plato's teaching go beyond that of Socrates? What does Plato mean by Ideas? What are their characteristics? What do you know of (a) Plato's doctrine of Recollection, (b) his proofs of the immortality of the soul, and (c) his theory of the parts of the soul? Examine (a) and (b).

Or,

On what grounds did Aristotle object to the Platonic doctrine of Ideas? Write notes on:—

- (a) the Aristotelian Categories;
 - (b) the generative causes of real being according to Aristotle;
 - (c) Aristotle's doctrine of virtue.
- Examine (b) and (c).

Or,

Give an account of the physical and ethioal doctrines of the Stoics. What are the points of agreement and difference between Stoicism and Epicureanism? Criticise both of them.

5. What do you know about Gnosticism? Trace its origin and history. Examine it.

Or,

Give an account of the philosophy of St. Thomas Aquinas. Examine it. 'Before the days of St. Thomas, Scholastic philosophy had shown symptoms of decline ; in him it shines with a light before which the most illustrious names pale'. Mention the main characteristics of Scholastic philosophy, and examine this observation in the light of your knowledge of them.

Second Half.

Examiner:—MR. BHOLANATH RAY, M.A.

(PLATO AND PLATO'S 'REPUBLIC'.)

N.B.—*Answer ANY THREE questions.*

Full Marks—50.

1. Trace the origin and development of Plato's doctrine of Ideas, and examine the doctrine critically.

2. 'The Platonic State rests wholly upon abstractions: it cannot endure the multiplicity and elasticity of actual life.' Give an account of the constitution of the State as set forth in the 'Republic', and in this connection discuss the statement given above.

3. Write notes on:—

- (i) Plato's doctrine of the World-Soul ;
- (ii) Plato's views on the End and Problem of the State.

4. What is Plato's scheme of Education as outlined in the 'Republic'? Discuss how far it is capable of being adopted in modern times.

5. Contrast the ethical and social views of Plato as formulated in the 'Republic' with those in the *Laws*.

SECOND PAPER

The questions are of equal value.

First Half

Examiner—MR. HUMAYUN Z. A. KABIR, M.A., B.A. (Oxon)

1. 'The real starting point of Descartes was, not *cogito ergo sum* as he thought himself, but an uncritical acceptance of the dualism of body and mind.' Discuss.

Explain Descartes' view of the method of Mathematics, and trace its influence upon his philosophy.

2. 'What reasons led Leibnitz to his conception of the monads?

Or,

'Descartes had said that the interaction of mind and body is actual but incomprehensible. Spinoza roundly denied both these positions.' Explain.

3. Examine Locke's claim to be considered the founder of the Critical Philosophy.

Or,

Can Locke account for our knowledge of the external world?

4. 'Berkeley's philosophy rests on a continuous appeal to our immediate experience.' Discuss.

Or,

Examine the distinction of primary and secondary qualities in Locke and Berkeley.

5. 'Hume's philosophical scepticism is but the obverse of an extremely confident and dogmatic psychology.' Do you agree?

Or,

Briefly state and examine the account of abstract ideas in Locke, Berkeley, and Hume.

Second Half

Examiner—DR. HIRALAL HALDAR, M.A., PH.D.

1. Give the substance of Kant's Theory of Knowledge. What ontological conclusions legitimately follow from it in your opinion?

Or,

Explain and estimate the value of Kant's Refutation of Idealism.

2. Give a critical account of Fichte's Subjective Idealism.

Or,

Explain and examine Schopenhauer's theory of the World as Will and Idea.

Or,

What were the points in, or aspects of, Kant's philosophy which determined the transition to the post-Kantian systems?

3. Give a general account of Hegel's Absolute Idealism.

Or,

How far in your opinion does Hegelianism agree with the main teaching of the Bhagavadgītā?

Or,

How does Hegel develop his principal categories in the second part of his Logic (Doctrine of Essence)?

THIRD PAPER

(Indian Philosophy)

The questions are of equal value.

First Half

Examiner—PROF. A. N. MOOKERJEE, M.A., PH.D.

N.B.—*The candidates are expected to point out, wherever possible, points of similarity between Indian and European systems of Philosophy.*

Attempt ANY THREE questions.

1. What precisely is meant by *Vyāpti* in Indian Logic? How does Chārvāka refute the validity of the *Vyāpti-jñāna* (knowledge of *Vyāpti*)? Compare his treatment of the Syllogism with that of Mill.

2. How does the Bauddha refute the existence of the Universal? How does he establish his doctrine of Impermanence?

3. Explain the different conceptions of *Moksha* (*Liberation, Release*) in Indian Philosophy. What are respectively the views of the four schools of Bauddha Philosophy regarding the External World?

4. How do the Upanishads interpret Ultimate Reality, and how do they conceive the relation of the Individual Soul to the Universal Soul?

5. Summarize the teachings of the Bhagavad Gītā on the following :—

- (a) Future Life ;
- (b) Personal God.

Second Half

Examiner—MR. SATISHCHANDRA CHATTERJEE, M.A.

Answer ANY THREE questions.

1. Explain and examine the Nyāya and the Vedānta views of Comparison (*upamāna*) as an independent source of knowledge.

Or,

Discuss the Nyāya theory of extraordinary perception (alaukika pratyakṣa) from the standpoint of the Vedānta.

2. Discuss the Nyāya-Vaiśeṣika theory of non-existence (abhāva) and its different kinds.

3. Explain and examine the Sāṃkhya conception of the puruṣa and its relation to prakṛti.

4. Compare and contrast Prabhākara's theory of knowledge with that of Kumārila.

5. Discuss the points at issue between Śaṅkara and Rāmānuja with regard to the question of the relation between the Absolute (Brahman) and the individual self (jīva).

6. How does the Sāṃkhya seek to refute the doctrine of Isvara or Personal Creator?

FOURTH PAPER

The questions are of equal value.

First Half

Examiner— { MR. ADHAR CHANDRA DAS, M.A.
(in consultation with
PROF. A. N. MOOKERJEE, M.A., PH.D.)

Answer ANY THREE of the following.

1. 'What real is the subject, and the object is merely an idea within the subject's consciousness.' Do you notice any reaction to this position in so far as current thought is concerned?

2. Meaning is regarded as logical. Is there any justification for the creation of a world which stands midway between the psychological and the physical?

3. According to some, every piece of predication involves a reference to reality and a predicate as such is universal. But as a matter of fact, reality is individual. Should we then say that predication must confine itself to the coupling of ideas or it must mean nothing at all?

4. According to some, a universal is an identity in difference. How far is the notion of 'identity-in-difference' intelligible? Discuss the problem with reference to the relation between a universal and the relevant particulars.

5. Give a clear exposition of the theories of *internal* and *external* relations. What are the difficulties involved in each theory? What is your own view on the subject, and on what grounds do you hold it?

Second Half

Examiner—DR. SUSILKUMAR MAITRA, M.A., PH.D.

Answer ANY THREE questions,

1. Explain the relation between—

- (a) Reality and Experience ;
- (b) Immediate Experience and Mediation.

Give a critical estimate of Bradley's views in this connection.

2. Do *ideas* float? Discuss the views of Bradley and Śāṅkara, and give your own view of the question.

3. Distinguish between *Truth* and the *Test of Truth*, and give your own view of each, with reasons.

4. Are there *logically neutral ideas*?

Explain the Nyāya view, and give your own view, with reasons.

5. Give a critical estimate of the *Akhyāti* view of error.

6. Discuss the nature of the Universal.

FIFTH PAPER

(Theory of Knowledge and Metaphysics.)

The questions are of equal value.

First Half.

Examiner—DR. SAROJKUMAR DAS, M.A., PH.D.

Only THREE questions are to be attempted.

1. Elucidate carefully the relation of Metaphysics to Logic and to Ethics respectively, commenting in this connection on the propriety of 'ethically inspired metaphysics'.

2. What is your conception of Causality as a category? Discuss in this connection the importance of Hume's service to this topic, and the force of the remark that 'Kant has not answered Hume'.

3. Attempt a critical estimate of the concept of Substance from the Logical, the Physical, and the Epistemological point of view.

4. Evaluate the arguments concerning the issue of Mechanism versus Vitalism regarding the problem of life. Is 'Life' an 'emergent'?

5. Expound fully the principle of Individuality, and show that 'it rather defines purpose than is defined by it'.

Second Half

Examiner—DR. RASHBIHARI DAS, M.A., PH.D.

Answer ANY THREE questions All are of equal value.

1. Explain and examine Bradley's doctrine of the degrees of truth and reality, bringing out clearly the meanings of truth and reality implied by this doctrine.
2. Can you prove, or disprove, that things cannot exist apart from knowledge? Examine the realist's or the idealist's attempt in either direction.
3. Give a critical account of Croce's theory of knowledge.
4. Explain clearly Gentile's conception of the mind or spirit and its relation to the objective world. Do you admit the charge of mysticism against it? What, in your opinion, is the relation between mysticism and philosophy?
5. Write a short essay on *one* of the following, showing your acquaintance with the view or views of one or more modern (recent or contemporary) thinkers on the subject: (i) Concrete Universal; (ii) Intuition; (iii) Sensum; (iv) Freedom; (v) Time.

(Logic)

FIRST PAPER

The questions are of equal value.

First Half

Examiner—MR. ANUKULCHANDRA MOOKERJEE, M.A.

N.B.—Answer ANY THREE questions.

1. 'Logic is not the science of belief, but of proof.' (*Mull.*) Examine this definition critically.
2. 'Proper names have a meaning which always goes beyond the presentation of the moment.' (*Bradley.*) Explain this remark, and consider its value in relation to the traditional view that a proper name is an arbitrary verbal sign.
3. Give a critical exposition of the view which regards every judgment as implying the reference of an ideal content to reality.
4. 'As soon as we judge, we are forced to analyze, and forced to distinguish. We must separate some elements of the given from others. We sunder and divide what appears to us as a sensible whole. It is never more than an arbitrary selection which goes into the judgment.' Discuss.
5. What do you think to be the exact nature of the relation between Logic and Psychology? Take any logical problem, and consider how far it admits of an answer within the limits of Psychology.

Second Half

Examiner—MR. HUMAYUN Z. A. KABIR, M.A., B.A. (Oxon).

1. 'Inference is a kind of thought and therefore it is no operation.' Discuss.

Or,

Examine the definition of Inference as 'the ideal self-development of a given object taken as real'.

2. Discuss the relation of inference to memory.

Or,

Do you agree with the dictum, 'There is no judgment which is not an inference'?

3. 'Every argument, whether deductive or inductive, is really analogical.' Discuss.

Or,

'Syllogism never generalizes.' Do you agree?

4. 'The law of causation is the presupposition and cannot therefore be the result of Induction.' Examine.

Or,

Are inductive conclusions established disjunctively by the disproof of alternatives?

5. Does the theory of propositions help us to account for error?

Or,

Does relational thinking involve a vicious regress?

SECOND PAPER

The questions are of equal value.

First Half

Examiner—MR. ADHARCHANDRA DAS, M.A.

Answer ANY THREE questions.

1. 'Negation is always a subjective or better human device of thought. It is a confession of human weakness that cannot go direct to the positive core of reality. It is a tribute to the instability of being. It is always relative to human purpose.' (*Schiller.*)

Discuss.

2. 'Logic as identified with pure mathematics is the science of pure form.' Can we then say that the mathematical logicians are carrying on the work which Aristotle himself initiated?

3. 'In advanced sciences, such as gravitational astronomy, the word *cause*—never occurs—and the reason why physics has ceased to look for causes is that in fact there are no such things.' (*Russell*.) Granting that the physicist does not employ the notion of cause, can we say that science has no use for it? Discuss with reference to Kant and Bradley.

4. Examine Bosanquet's position that to be conscious means to judge, and that the world of every individual is constructed by a continuous judgment which is coextensive with his consciousness.

5. According to Johnson, a proposition is what is proposed in thought; a proposition is assertible or actually asserted: he therefore makes a distinction between two functions of the copula—the connecting link between the subject and the predicate—as a characterizing tie and as an assertive tie. Is there any difficulty in maintaining this distinction in such propositions as, 'there is a wolf', 'this is a bird'?

Second Half

Examiner—SIR S. RADHAKRISHNAN KT., M.A., D.LITT.

Answer ANY THREE questions.

1. How would you define the Dialectical method? Will your definition cover the logical methods adopted by Plato and Hegel?

2. What traces of Hegel's Dialectic do you find in Kant? Discuss fully.

3. State and estimate the value of the contribution of *either* Russel or Couturat to recent logical thought.

4. What is Schiller's view of the relation of Logic to Psychology? Do you agree with it?

5. How is simple apprehension related to conceptual judgment and intuitive knowledge?

(Psychology)

FIRST PAPER

The questions are of equal value.

First Half

Examiner—DR. SUHRIDCHANDRA MITRA, M.A., D.PHIL.

Answer ANY THREE questions.

1. Draw a diagram of the sense organ of Vision, and explain the functions of the different parts.

2. What is Learning by the Method of Trial and Error? Attempt to describe the physiological process that underlie such learning.

3. Frame a physiological theory of Attention, taking into account the facts of mobility, persistence in spite of mobility, and focussing in all attentive processes.

4. Write notes on *any three* of the following:—

- (a) Touch spots, (b) Facilitation and Inhibition, (c) Ductless glands
(d) Complementary colours, (e) Aphasia, (f) Medulla oblongata.

5. Write an essay on the aim, the scope, and the limitations of Physiological Psychology.

Second Half

Examiner—MR. BHOLANATH RAY, M.A.

N.B.—*Answer ANY THREE questions.*

Full Marks—50.

1. Ward defines Psychology as 'the science of individual experience'. Fully explain what elementary facts are involved in 'individual experience', and state their relations to one another.

2. Give an exposition of Ward's theory of Attention, and show in what way it overcomes the shortcomings of 'Faculty Psychology'.

Or,

Explain Ward's theory of Presentations, and determine the conditions of the development of the 'Presentational continuum' in the psychological individual.

3. Fully explain, with illustrations, Hollingworth's definition: 'Psychology is the science which concerns itself with mental processes and with subjective events'.

Or,

Give a summary of the General Laws of Redintegration with illustrations.

4. Write notes on *any three* of the following:—

- (i) Regressive Association ;
(ii) Apperception ;
(iii) Conditioned Reflexes ;
(iv) Dynamic Psychology.

5. What are the characteristics of pleasurable and painful feelings? State and estimate the value of the principal theories of pleasure and pain from the psychological standpoint.

Or,

Write a short essay on Memory.

SECOND PAPER

The questions are of equal value.

First Half

Examiner—PROF. HARIDAS BHATTACHARYYA, M.A., PH.D.

Answer ANY THREE of the following questions.

1. Trace the development of the doctrine of Apperception from Leibniz to Wundt.

2. Distinguish between an intellectualistic and a voluntaristic interpretation of mental life.

What would 'mental activity' mean in each school?

Or,

What is the exact point at issue between Behaviouristic and Hormic Psychology?

Illustrate your answer by reference to the problem of Instinct.

3. How has the Subconscious been understood by *any three* of the following?—

Freud, Jung, Morton Prince, McDougall, Rivers.

4. What do you consider to be the best theory on the integrative character of the Self?

Discuss this question by reference to concrete cases of dissociation and multiple personality.

Or,

How has the relation between the Self and Consciousness been understood by *any three* of the following writers?—

Kant, Herbart, Hume, James, Wundt.

5. Critically discuss Associationism as a theory of mental development.

Second Half

Examiner—MR. HARIPADA MAITY, M.A.

Attempt ANY THREE questions.

1. Give a short history of Hypnotism. Discuss the essential conditions of Hypnotism.

2. Discuss fully Jung's theory of Dreams. Bring out in this connection the relative standpoints of Freud and Jung.

3. Write notes on *any four*:—

- (a) Polymorphous perverse; (b) 'Moron'; (c) 'Screen memories';
- (d) Latency Period; (e) Post-hypnotic suggestion.

4. Describe different types of Dissociation of Personality.

Or,

Discuss how neuroses are produced.

5. Discuss the general principles of animal learning.
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(Ethics)

FIRST PAPER

The questions are of equal value.

First Half

Examiner—MR. ABANIMOHAN RAY, M.A.

Answer ANY THREE questions.

1. How is Ethics related to Politics? Discuss if and how far it is necessary for Ethics to determine perfect human relations in an ideal society.
2. Examine Sidgwick's account of the Moral Ideal as compared with Green's.
3. Discuss *any two* of the following:
 - (a) Imperative character of the ethical judgment.
 - (b) Distinction between subjective and objective rightness.
 - (c) Psychological Hedonism and its relation to Ethical Hedonism.
4. Give a critical estimate of either Hedonism or Intuitionism. Discuss the possibility of their reconciliation.

Or,

Analyze and examine the common-sense notion of Justice. Discuss in this connection if common-sense morality is unconsciously utilitarian.

5. Explain and examine the validity of the postulates of moral life as enunciated by Kant.

Or,

How does Green reconcile the eternal nature of the spiritual principle in man with the fact that it undergoes moral development?

Second Half

Examiner—PROF. K. N. MITTER, RAI BAHADUR, M.A.

Answer ANY THREE questions.

1. What is meant by Moral Progress? Can it have any meaning apart from the Moral Ideal? What is the Moral Ideal?
2. Explain the origin and growth of the feeling of moral obligation. How does the Theory of Evolution affect the question?

3. What is meant by 'moral values'? What place do the traditional virtues occupy in respect of ultimate moral values?
 4. Discuss the conception of freedom with reference to the views of Kant, Hegel, and Green.
 5. Explain the relation of the State to development of morality in the individual and society.
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SECOND PAPER

Examiner—DR. A. N. MOOKERJEE, M.A., PH.D.

The questions are of equal value.

First Half

N.B.—*Attempt ANY THREE questions.*

1. How does Green establish a Spiritual Principale in Nature?
2. Show how the doctrine of Self-Determinism reconciles the extremes of Indeterminism and Determinism.
3. How does Green criticize the ethical doctrine of Pleasure as the supreme good?
4. Explain and examine Kant's theory—
 - (a) of the Categorical Imperative,
 - (b) of the relation of Inclination to Duty.
5. Sketch Moore's criticism of the Naturalistic theories of Ethics.

Second Half

N.B.—*Attempt ANY THREE questions.*

1. Clearly explain the conception of the Social Mind, bringing out the different factors or aspects which the conception involves.
2. How does the institution of Marriage undergo variation at different stages of Social Evolution? Explain the types or forms of marriage recognized in Sociology.
3. How do Comte, Spencer, and Giddings respectively interpret the main stages of Civilization or Social Development?
4. Explain what is meant by Social Constitution and Social Composition.
5. Explain and illustrate the principal Laws of Social Phenomena.

(Philosophy of Religion)**FIRST PAPER***The questions are of equal value.***First Half***Examiner*—MR. NALINCHANDRA GANGULI, M.A.*Answer ANY THREE questions.*

1. Discuss the relation between Religion and Morality. Is religion possible without morality?
2. What is meant by 'the characteristic convictions of every religious mind'? Criticize them.
3. Examine critically the basis and nature of religious consciousness.
4. Estimate the value of Mysticism. Add Eastern parallels.
5. Elucidate the attitude of Reason to Faith. Are they antagonistic?

Second Half*Examiner*—DR. SAROJKUMAR DAS, M.A., PH.D.*Only THREE questions are to be attempted.*

1. What, in your opinion, is the kernel of our belief in God? Justify in this context the remark that 'the natural limitedness and legal externality of the Jewish belief in God' were overcome in 'the religious idealism of Jesus'.
 2. Elucidate the true significance of the Ontological argument for God's existence, and formulate it in such a way as to obviate the force of Kant's criticism thereupon.
 3. Is there any principle governing the ascription of attributes to God? Indicate the attributes in Divine nature that appeal to you most, stating reasons for your preference.
 4. What is your idea of Personality? Substantiate fully the remark: 'Complete personality can only be in God, while to man can belong but a weak and faint copy thereof'.
 5. On what considerations is the distinction between God and the Absolute maintained in modern thought? Discuss the question with specific reference to Bradley, Rashdall, McTaggart, and Ward.
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SECOND PAPER

The questions are of equal value.

First Half

Examiner—DR. W. S. URQUHART, M.A., D.LITT., D.D., D.L.

Answer ANY THREE questions.

1. Discuss the relation between Time and Eternity in terms of Divine Purpose.
2. What modifications does modern philosophy introduce in the deistic and temporal view of Creation?
3. The idea of Incarnation may be of low or of high religious and philosophical value. How would you introduce and apply a criterion of the value of an Incarnation theory?
4. Discuss the implications of the saying that 'Miracles are not contrary to nature but contrary to what is known to us as nature'.
5. What view of cosmic evolution permits you to establish the objective validity of religious beliefs?

Second Half

Examiner—MR. SATISCHANDRA CHATTERJEE, M.A.

Answer ANY THREE questions.

1. What do you mean by an individual? How is the individual self related to God?
 2. Justify or criticize the following statement:—
'God and evil are contraries: if the problem of evil is altogether insoluble, there is an end of theism: if God exists, there is nothing absolutely evil.'
 3. What are your reasons for accepting or rejecting the belief in the pre-existence and immortality of the individual self?
 4. Explain the law of karma, and discuss its implications for the moral and religious life.
 5. What do you understand by 'the eternal life'? Is it possible for us to attain it in this life or in this world?
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(Special Branch of Indian Philosophy.)
(Sāṃkhya-Yoga Group.)

FIRST PAPER

The questions are of equal value.

First Half.

Examiner—DR. S. N. DASGUPTA, M.A., PH.D.

Answer ANY THREE questions.

1. Explain clearly the Sāṃkhya theory of evolution.
2. Explain clearly the Sāṃkhya theory of perception.
3. What, according to the Sāṃkhya, is the status of our experiences ? Are they phenomenal or real ? Give reasons for your answer.
4. How does the Sāṃkhya reconcile mechanism with teleology ?
5. What is the nature of the Sāṃkhya theory of illusion ? In what sense are our experiences illusory ?

Second Half

Examiner—DR. NALINIKANTA BRAHMA, M.A., PH.D.

Answer ANY THREE questions.

1. Explain clearly the Sāṃkhya theory of bondage and release, pointing out the reasons for holding that bondage is not ultimately real.
2. How does the Sāṃkhya seek to refute the Vedāntic doctrine of one undivided Puruṣa or Atmā ? Discuss fully whether the Sāṃkhya doctrine of a plurality of selves is strictly consistent with what it sets forth as the real nature of the Puruṣa.
3. Explain clearly vijñāna Bhikṣu's view of the nature of the ultimate reality, and point out its merits and demerits as against the Absolute Monism of the Sāṃkhya.
4. Compare the Paripāma-vāda of the Sāṃkhya with the Ārambha-vāda of the Nyāya-Vaiśeṣika.
5. How does the Sāṃkhya establish the existence of the Puruṣa ;
6. Explain clearly the arguments contained in the following passage :—

नहि बाह्याभावे मुख्यमेव प्रसज्येत, न तु विज्ञानमपि, कुतः ? तदभावे तदभावात्
 बाह्याभावे विज्ञानस्याव्यवहारप्रसङ्गाविज्ञानप्रतीतिरपि बाह्यप्रतीतिवदवस्तुविषयत्वानुमानसम्भवात् ।
 विज्ञानप्रामाण्यस्य ह्याप्यसिद्धत्वाच्च, तथा विज्ञाने प्रमाणागममपि बाह्यतयापलापाच्चेत्यर्थः । नन्वनुभवे
 कस्यापि विवादाभावेन नास्ति तत्र प्रमाणापेक्षेति चेन्न । मुख्यवादिनामेव तत्र विवादात् ।
 अद्यावत्तयापि प्रमाणेन वस्तु सिद्धिः । विषयावाच्यस्यैव प्रामाण्यप्रयोजकत्वाद्, न तु प्रमाणापारमार्थिक-
 त्वेति चेन्न ।

SECOND PAPER

The questions are of equal value.

First Half

Examiner—PROF. S. KUPPUSWAMI SASTRI, M.A., I.E.S.

N. B. Answer Question 6 and ANY TWO of the rest.

1. Elucidate the nature and interrelation of the following in the Sāṃkhya-Yōga system :—

Jīva, Īśvara, Prapañca.

2. Amplify and examine the following observation in the light of what you gather from the Sāṃkhya-Yōga texts :—

‘Matter carries with it the promise and potency of the whole Universe.’

3. Give a succinct and critical account of the Sāṃkhya Yōga epistemology, with particular reference to *pramāṇa*, *pramā*, *bhrama*, *buddhi*, *upalabdhi*, and *jñāna*.

4. Give an account of the evolution of the systems of thought known as Sāṃkhya and Yōga, indicating the place and value of the contributions made by *Īśvarakṛṣṇa*, *Vācaspati*, and *Vijñānabhikṣu* to these systems.

5. Critically estimate the Sāṃkhya-Yōga views regarding *mokṣa* and *mokṣa-sādhana* in comparison with the corresponding views of Buddhism.

6. In expository notes, render intelligible the nature of—

- (1) *Karmāsayaḥ*, (2) *Cittaparikarma*, (3) *Nissattīṣattamavyaktam*,
(4) *Asatkīryavūdaḥ*, (5) *Nava tuṣṭayaḥ*.

Second Half

Examiner—DR. A. N. MOOKERJEE, M.A., PH.D.

Attempt ANY THREE questions.

1. Explain the two kinds of *Samādhi* (समाधि), सम्प्रज्ञातः and असम्प्रज्ञातः. Explain also the two forms of the latter, viz. उपायप्रत्ययः and भवप्रत्ययः.

2. Explain, after the commentaries,—

- (a) the nine obstacles (अवरोधः) to the practice of concentration ;
(b) the five *Vṛttis* (वृत्तयः).

3. How does the Yōga Philosophy characterize *Īśvara* (ईश्वरः) ? How does it distinguish *Īśvara* from *mukta Puruṣas* ? What place does *Īśvara* occupy in the Yōga system ?

4. How does the Yōga Philosophy expound its conception of *Avidya* (अविद्या) ?

5. Translate into English :—

इन्द्रियप्रणालिकया चित्तस्य बाह्यवस्तुपरागात्, तद्विषया सामान्यविशेषात्मनीर्णयस्य विशेषावधारणप्रधाना इति: प्रत्यक्षं प्रमाणं । फलमविशिष्टः परीक्षयश्चित्तवृत्तिबोधः; बुद्धेः प्रतिसंवेदौ पुरुषः ।

अनुमेयस्य तुल्यजातीयेष्वनुवृत्ती भिन्नजातीयेष्वो व्यावृत्तः सम्बन्धो यस्तद्विषया सामान्यावधारणप्रधाना इतिरनुमानं । यथा, देशान्तरप्राप्तेः गतिमत् चन्द्रतारकं, चैववत् ; विन्यसाप्राप्तेरगतिः ।

आमेन दृष्टोऽनुमिती वा अर्थः परव स्वबोधसंक्रान्तये शब्देनोपदिश्यते, शब्दान्तरदर्शयविषया इति: श्रोतुरागमः । यस्याशब्देयार्थः वक्ता, न दृष्टानुमितार्थः, स आगमः प्रवृत्ते, मूलवक्तरि तु दृष्टानुमितार्थे निर्विप्रवः स्यात् ।

6. How does the Sāṃkhya establish a plurality of Purushas ?

(Translation—Vedānta.)

FIRST PAPER

The questions are of equal value.

First Half

Examiner—MR. KOKILESWAR BHATTACHARYYA, SASTRI, M. A.

1. Explain the theory of अन्वया-व्याप्ति as held by the *Naiyāyikas*.
2. Explain the real significance of Śāṅkara's conception of Nirguṇa-Brahma, and contrast it with the idea of Saguṇa.

In this connection, take the following line :—

“ब्रह्मणीऽपि न मुख्यं सर्वज्ञत्वमुपपद्यते, नित्यज्ञानक्रियात्वे ज्ञानक्रियां प्रति स्वातन्त्र्याभावात्”
(i. e. 'the original all-knowingness of even Brahma is not established, since in the act of eternal knowledge, there can be no independence in the act of knowledge').

Explain clearly this extract, and give in your own words the substance of Śāṅkara's reply to this objection urged by his opponent.

3. *Either,*

State generally how an attempt has been made to refute the theory of Subjective Idealism (विज्ञानवाद), and briefly state Śāṅkara's own theory.

Or,

What do you understand by the terms—एकजीववाद and बहुजीववाद ? Discuss both the views, and show towards which of the two you consider Śankara to have shown a leaning.

4. How and where does Śankara reach the conclusion that there is a distinction between perception and the object of perception ?

In case of such distinction, how can the objects be dismissed as illusory—a view which is generally ascribed to Śankara ?

Second Half.

Examiner—DR. SUSILKUMAR MAITRA, M.A., PH.D.

Answer ANY THREE questions.

1. Distinguish between the relational (Tatastha) and the non-relational (Svarūpa) attributes of Brahman. How are they related to one another (a) according to Śankara, (b) according to Rāmānuja ? Give your own estimate of the Śankarite and the Rāmānujist views of the question,

2. It is asserted by a well-known writer that Śankara has assumed Māyā on Śastric authority without logical proof. Do you accept this view ? Give reasons for your answer.

3. Give a comparative and critical estimate of the Śankarite and the Sāṅkhya views of the world of experience.

4. Would you accept world-denial as the consummation of the spiritual life ? Give your own view with reasons, and give your estimate of the Śankarite view in this connection.

5. Discuss the following :—

- (a) The effect is a new beginning.
 - (b) The effect is the transformation of the material cause.
 - (c) The effect is an apparent modification of the material cause.
-

SECOND PAPER

The questions are of equal value.

First Half

Examiner—DR. S. N. DASGUPTA, M.A., PH.D.

Answer ANY THREE questions.

1. Explain clearly the nature of the relation of the Prakṛiti to the Puruṣhas.

2. If the puruṣhas do not produce any effect, there is no proof that they exist. If they produce any effect they would be changing, and hence no purpose would be served in admitting their existence. Explain the way out of the dilemma.

3. In what sense can the Sāṅkhya be regarded as realistic and in what sense idealistic?

4. How would you distinguish between sattva (which is regarded as illuminating) and puruṣa? Explain it clearly, and show its bearing on world-experience and emancipation.

5. Explain the nature of the Sāṅkhya teleology and the part that it plays in determining microcosmic and macrocosmic phenomena.

Second Half

Examiner—MR. UMESCHANDRA BHATTACHARYYA, M.A.

Answer ANY THREE questions.

1. Examine the relation between *Karma* and *Jñāna*, and hence that between the two *Mīmāṃsas*, according to Rāmānuja.

2. Is *any* knowledge and is knowledge *by itself* capable of leading to salvation? If not, what is the specific character of the knowledge that, according to Rāmānuja, leads to salvation?

3. What is the relation between the world and its cause, according to Rāmānuja? Is the world real?

4. Is Brahman knowable? If so, can He be known by means other than *Śabda*?

5. How does Rāmānuja prove that Brahman has differentiating attributes—that He is *सुविशेष*?

(Vedanta Group)

FIRST PAPER

The questions are of equal value.

First Half

Examiner—MR. KOKILESWAR BHATTACHARYYA, SASTRI, M.A.

1. In his famous Introduction to the *Brahma-sūtra*, Śaṅkara contrasts the subjelt (विषयी) with the object (विषय) showing their mutual opposition (विरोध). Yet in numerous other passages of his commentary he appears to have abolished the idea of differences (भेदबुद्धि) in the world. How would you reconcile this ?

2. Clearly explain the following extract :—

‘यत्र यदध्यासस्तत्तेन दीविष्य गुणं वा अनुमानेनापि स न संबध्यते’ (i. e. ‘Where there is imputation of anything, it is not in the least affected by the fault or merit caused by such imputation’).

(Give a brief account of *Adhyāsa* (अध्यास).

3. “सदेव सौम्येदमय आसीत्.....तदैक्षत बहु स्यां प्रजायिष्य” (‘O gentle pupil, this was in the beginning an entity (सत्).....it observed—Let me be multiplied, let me be produced’)—

Here in this *Śruti* the word सत् occurs. What do you understand by this term ? Show how Śaṅkara has refuted the ideas that सत् here cannot be सांख्य-प्रकृति nor can it be जौवात्मा.

Either,

4. Give some of the points of the अनेकान्तवाद or भेदाभेदवाद, as stated in the commentary of Śaṅkara, and show how Śaṅkara refutes this theory, and where.

Or,

Describe the ‘atomic theory’, comparing it with the Western view, and give some of the main ideas of Śaṅkara’s refutation.

Second Half

Examiner—PROF. S. KUPPUSWAMI SASTRI, M.A., I.E.S.

Answer any four of the following questions.

1. Discuss the following estimate of Śaṅkara, with particular reference to the text of the second chapter of Śaṅkara's *Bhāṣya* on the *Brahma-sūtras* :—

‘Śaṅkara had a wonderful power of mind, but as a man, he had his prejudices and, under his logical apparatus, he was passionate enough to be sometimes an unfair antagonist. This makes his personality so much more attractive.’

2. With special reference to Śaṅkara's criticisms of the doctrines of the *Śaṅkhyas*, *Tārikas*, and *Bauddhas*, consider to what extent, the following statement is sustainable :—

“सांख्यतात्त्विकबौद्धानां संकराच्छांकरोदयः ।”

3. In a comparative note, make clear the noteworthy points of correspondence and divergence between Śaṅkara on the one hand and *Heghart* or *Kant* or *Fichte*, on the other.

4. Elucidate the nature and place of *Īvara* in Śaṅkara's system, in the light of Śaṅkara's comments on the following *Sūtras* :—

“लोकवस्तु लोलाकैवल्यम् । वैषम्यनैर्घृणे न सापेक्षत्वात् तथाहि दर्शयति ।”

5. Make clear the arguments in favour of the following view and refute it, according to Śaṅkara :—

“नवनेकात्मकं ब्रह्म । अत एकत्वं नानात्वं श्रीभयमपि सत्यमेव ।”

6. Critically review the arguments which Śaṅkara adduces :—

(1) to refute *Samavāya*,

and (2) to maintain—“आत्मैकत्वपक्ष एव सर्वदोषाभावः” ।

SECOND PAPER

The questions are of equal value.

First Half

(VEDĀNTA-PARIBHĀṢĀ)

Examiner—DR. DHIRENDRAMOHAN DATTA, M.A., PH.D.

Answer ANY THREE questions.

1. Give a short account of the *process* of external perception according to *Vedānta-paribhāṣā*. Is the object *as perceived* indetical with the object *as existing* outside the mind, according to this view ?
2. Is memory an independent and valid source of knowledge ? Discuss this question critically, and state your opinion.
3. Discuss the theory of threefold *satā*, and critically consider the possibility of degrees of reality.
4. Is there a state of dreamless sleep ? Is it conscious or. unconscious ? Discuss these questions critically in the light of Vedānta and Western philosophy.
5. Briefly discuss the Advaita theory of Upamāna, and state how far it is tenable.

Second Half

Examiner—MR. UMESCHANDRA BHATTACHARYA, M.A.

Answer ANY THREE questions.

1. Is a desire to know Brahman (ब्रह्मजिज्ञासा) dependent on any prior conditions ? If so, what are they according to Rāmānuja ? How does Rāmānuja maintain his position in this matter against his opponents ?
 2. Mention some of the leading attributes of Brahman according to Rāmānuja. Is Brahman a Self ?
 3. Attempt an analysis of perception according to Rāmānuja. How does Rāmānuja refute the view that perception gives knowledge of undifferentiated existence only (“सन्नामस्यैव प्रकाशकं प्रत्यक्ष”) ?
 4. Describe the nature of the finite soul according to Rāmānuja. How is it related to Brahman ?
 5. Examine critically Rāmānuja's theory of error, and compare and contrast it with that of Śaṅkara.
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EIGHTH PAPER

Examiner :—PROF. A. N. MOOKERJEE, M.A., PH. D.

The figures in the margin indicate full marks.

Write an essay on *any one* of the following subjects :—

100

- (a) The development of Kant's Philosophy in the Post-Kantian systems.
- (b) Recent theories of the relation of Body and Mind.
- (c) The relation of Logic to Metaphysics.
- (d) The Categories—Aristotle, Kant, Hegel, Schopenhauer, and J. S. Mill.
- (e) Relation of Virtue to Happiness.
- (f) Pessimism and Optimism in Indian and European Philosophy.
- (g) The Conscious and the Unconscious.
- (h) Indian and European Logic.
- (i) Sankara and Kant.
- (j) Pragmatism—its history, types, and criticism.
- (k) Creation, Evolution, and Creative Evolution.
- (l) Personality, human and divine.
- (m) The doctrine of Māyā in Indian Philosophy.

COMMERCE

FIRST PAPER

(Realistic Economics)

The questions are of equal value.

Only THREE questions to be attempted from EACH half.

First Half

Examiner—MR. P. C. GHOSH, M.A., B.Sc.

1. Discuss the advantages that the manufactures derive and the risks that they face from the existence of organized markets for their chief raw materials.

2. What is the part played by banks and other financial agencies of Europe in the adaptation of industry and trade to the enlarged financial requirements of the modern age? Discuss in this connection the present relation of banks to industry and trade in India.

3. Discuss the various influences of monopoly on prices.

4. How do you account for the present economic depression in Bengal? What measures would you suggest for the revival of Bengal industry and trade?

5. What is the rôle that is played by (1) business managements, (2) technical experts, (3) lenders, (4) consumers, (5) Government, and (6) promoters respectively in the guidance of economic activity under modern economic organization?

Second Half

Examiner—MR. P. CHAKRABARTI, M.A.

1. Discuss the possible disadvantages of the Gold Exchange Standard to (a) the country adopting it, and (b) to the world at large.
2. What considerations should govern (a) the amount, and (b) the use of the reserves of Central Banks?
3. Explain fully the effect of changes in the Bank-rate on a country's balance of international payments.
4. Explain crefully the basis and the measure of the gain from International Trade. What is the test of such gain?
5. Discuss briefly the effectiveness of the chief methods usually adopted to prevent excessive depreciation of the exchanges.

SECOND PAPER

(Accountancy)

The questions are of equal value.

First Half

Examiner—MR. N. SARKAR, M.A.

Question 5 is compulsory. Answer two more questions out of the remaining four.

1. *A* owes Rs. 6,000 to *B* for goods supplied. Being unable to repay the debt, *A* assigns his life insurance policy to *B* as on January 1, 1930. The policy is for Rs. 10,000, without profits, payable at the age of 55 or at death, whichever is earlier, and carries an annual premium of Rs. 500.

On the date of assignment, *A*'s age was 45 years and the surrender value of the policy was Rs. 4,563. *B* decides to continue the policy by paying the annual premiums when they become due. He pays the first premium of Rs. 500 on 31st December, 1930, and a like sum on the same date each subsequent year till the maturity of the policy by *A*'s death on January 2, 1933.

The surrender value of the policy as on December 31, 1930, was Rs. 4,775, on December 31, 1931, was Rs. 5,004, and on December 31, 1932, was Rs. 5,365.

Show the accounts recording these transactions in *B*'s books.

2. *X*, *Y*, and *Z*, who have been in partnership business for many years, sharing profits and losses in the proportion of 5: 3: 2, decide, on account of heavy losses suffered in recent years, to dissolve the partnership and retire. The assets and liabilities as at the date of dissolution were as follows:—

Goodwill, Rs. 10,000 ; Sundry Assets, Rs. 80,000 ; *Z* A/c, overdrawn, Rs. 5,000 ; Debit Balance of Profit and Loss A/c., Rs. 30,000 ; Capital

A/cs.: X, Rs. 40,000 and Y, Rs. 30,000 ; Sundry Creditors, Rs. 40,000 ; Bank Overdraft, Rs. 15,000.

Sundry Assets realise Rs. 60,000. Goodwill fetches nothing. Z is insolvent, his estate pays a dividend of four annas in the rupee. The expenses of dissolution amount to Rs. 1,000.

Close the books of the firm.

3. What is meant by Single Entry System of Book-keeping? What are its obvious defects? Explain in detail what steps you would take to convert into Double Entry System a set of books kept on the Single Entry System, incidentally bringing out the advantages of the Double Entry System over the Single Entry System.

4. (a) The capital of a Company is Rs. 5,00,000, divided into 50,000 shares of Rs. 10 each, fully paid. The Company has accumulated a reserve of Rs. 3,00,000. It wants to utilise half of its reserve by issuing to the shareholders 25,000 bonus shares of Rs. 10 each, fully paid, each shareholder receiving one share for every two shares held in the Company. Give the necessary Journal entries, and state if any legal formalities are necessary to give effect to the above intention.

(b) A Company has been suffering heavy losses for the last five years. It decides to reduce its share capital from 20,000 shares of Rs. 100 each, Rs. 50 per share paid up, to 20,000 shares of Rs. 100 each, Rs. 25 per share paid up. State what legal formalities are necessary before the above intention of the Company can be given effect to. Pass the necessary Journal entries and indicate how the Share Ledger and Share Certificates will be affected.

5. In a manufacturing concern, the Works Oncost is a fixed percentage of Labour, and the Office Oncost is another fixed percentage of Works Cost.

On one occasion, in manufacturing 1,000 units of a certain commodity, the cost of materials has been Rs. 20,000 ; that of labour Rs. 25,000. The entire production is sold at Rs. 89,375, realizing a profit of 10% on the Cost of Sales.

On another occasion, in manufacturing the same quantity of the same commodity, the cost of materials has been Rs. 30,000 ; that of labour Rs. 36,000. The entire production is sold at Rs. 1,24,425, realizing a profit of 5% on the Cost of Sales.

Find out the fixed percentages to be applied in the cases of Works Oncost and Office Oncost.

Or,

Discuss in detail (i) three different methods of Wage Remuneration, and (ii) three different methods adopted in calculating the value of materials to be charged to jobs.

Second Half

Examiner—MR. RANJIT RAY, M.A., A.C.A., F.R.E.S.

Any THREE questions to be attempted.

1. From the following figures supplied to you by the Orient Insurance Co., Ltd., prepare a revenue account and Balance Sheet as on the 1st December, 1933:—

Capital, Rs. 1,00,000 ; Life Insurance Fund as on the 1st January, 1933, Rs. 1,92,31,000 ; Premium Receivable, Rs. 39,00,000 ; Interest

Receivable, Rs. 8,28,520 ; Rent Receivable, Rs. 1,71,480 ; Policy Renewal Fee, Rs. 6,000 ; Sundry Liabilities, Rs. 21,000 ; Claims by Death, Rs. 12,00,000 ; Claims by Maturity, Rs. 20,00,000 ; Agents and Canvassers' Allowances, Rs. 11,600 ; Agents and Canvassers' Salaries Rs. 29,000 ; Travelling Expenses, Rs. 3,000 ; Directors' Fees, Rs. 6,000 ; Auditors' Fees, Rs. 2,000 ; Claims admitted but not paid, Rs. 6,28,000 ; Medical Fees, Rs. 60,000 ; Commission, Rs. 3,00,000 ; Rent paid, Rs. 3,000 ; Investments in Government Securities, Rs. 55,00,000 ; Mortgages, Rs. 61,00,000 ; Income Tax on Interest, Rs. 6,000 ; Law Charges, Rs. 5,000 ; Advertisements, Rs. 8,000 ; Printing and Stationery, Rs. 14,000 ; Postage and Telegrams, Rs. 8,000 ; Receipt Stamps, Rs. 2,000 ; Loans on Policies, Rs. 54,00,000 ; Outstanding Premiums, Rs. 4,20,000 ; Bank Charges, Rs. 1,000 ; Charges General, Rs. 3,000 ; Surrenders, Rs. 50,000 ; Re-assurance Premiums, Rs. 40,000 ; Interest Outstanding, Rs. 1,30,000 ; Properties, Rs. 22,00,000 ; Deposits with Banks, Rs. 11,00,000 ; Cash with Banks in Current Account, Rs. 2,82,000 ; Cash in Hand, Rs. 2,400.

2. You are given the following Manufacturing Account and Profit and Loss Account of the Beta Manufacturing Company, and are asked to work out the percentages of Manufacturing Profit to Turnover and also the percentage of net profit to turnover. Prepare a corrected Manufacturing and Profit and Loss Account, and work out the percentages:—

Manufacturing Account for the year ending 30th June, 1934.

	Rs.		Rs.
To Opening Stock Manu-		By Closing Stock Manu	
factured Goods ...	3,00,000	factured Goods ...	2,50,000
„ Opening Stock Raw		„ Closing Stock Raw	
Materials ...	2,50,000	Materials ...	2,00,000
„ Labour ...	1,50,000	„ Sales ...	8,00,000
„ Travellers Commis-			
sion ...	26,000		
„ Travellers Expenses	10,000		
„ Manufacturing Profit			
Carried down ...	5,14,000		
	<hr/>		
	12,50,000		12,50,000

Profit and Loss Account for the year ending 30th June, 1934.

	Rs.		Rs.
To Salaries ...	24,000	By Sales ...	8,00,000
„ Rent (including Fac-		„ Net Profit ...	1,48,000
tory Rent Rs.20,000	32,000		
„ Carriage Inward ...	30,000		
„ Charges General ...	2,500		
„ Raw Materials Pur-			
chased ...	2,50,000		
„ Carriage Outward ...	24,000		
„ Electricity for Power	50,000		
„ do. for Lighting ...	1,000		
„ Postage and Stationery	4,500		
„ Advertisements ...	10,000		
„ Interest ...	6,000		
„ Manufacturing Profit	5,14,000		
	<hr/>		
	9,48,000		9,48,000

3. Mr. *A* and Mr. *B* are in business in the same line and desire to amalgamate with a view to obviating competition. Their Balance Sheets are given below. They want to carry on business as *A, B, and Co.* but cannot come to terms. *B* suggests that they should amalgamate on the basis of the respective balance sheet figures, that is, by a simple addition of each balance sheet, he keeping five-sixth of the capital and profits, *A* getting the balance. *A* calls you in to advise them in settling the fairest terms. What do you consider the best terms for both, and why? Prepare also the opening balance sheet of the firm after such amalgamation.

Mr. A's Balance Sheet.

	Rs.		Rs.
Capital	... 1,00,000	Plant and Maclrineries	... 1,00,000
Creditors	... 30,000	Stock in Trade	... 90,000
Reserve	... 20,000	Debtors	... 60,000
Sundry Liabilities	... 6,000	Payments in Advance	... 2,000
Bank Overdraft	... 40,000		
Profit and Loss A/c.			
Balance for 1933	... 56,000		
	<hr/> 2,52,000		<hr/> 2,52,000

Mr. B's Balance Sheet.

	Rs.		Rs.
Capital	... 5,00,000	Goodwill	2,00,000
Creditors	... 1,00,000	Land and Buildings	1,00,000
Sundry Liabilities	... 10,000	Plant and Machineries	1,00,000
Profit and Loss A/c.		Stock in Trade	1,00,000
Balance for 1933	... 50,000	Debtors	60,000
		Cash at Bank	1,00,000
	<hr/> 6,60,000		<hr/> 6,60,000

4. *A* and *B* are in partnership, sharing profits and losses equally. On *A* wanting to retire *B* decides to convert the firm into a limited Company. The following is the balance sheet of the firm on the 30th June, 1933:—

	Rs.		Rs.
Capital: <i>A</i>	.. 40,000	Plant	.. 35,000
Capital: <i>B</i>	... 40,000	Stock	... 40,000
Balance on <i>A</i> 's Appropriation Account	... 12,000	Debtors	... 29,000
Balance on <i>B</i> 's Appropriation Account	... 10,000	Cash	.. 25,000
Sundry Creditors	... 6,000		
Profit and Loss Account	... 21,000		
	<hr/> 1,29,000		<hr/> 1,29,000

As *B* was unable to pay off *A*'s dues and share of goodwill in cash *A* agreed to accept payment as follows: his capital and share of goodwill in 6% preference shares, and amount due to him on current account and his share of profit in 6% debentures. *B* decided to pay off the sundry creditors from the cash in hand and take ordinary shares for his capital

and goodwill. He also decided to take debentures for the balance due to him on current account and share of profits. *B* forms the limited company with an authorized capital of 10,000 ordinary shares of Rs. 10 each and 10,000 preference shares of Rs. 10 each, and issues only such of the shares as are required to carry out the above arrangements. It was also agreed that the goodwill of the firm should be valued at twice the average profit of the last four years, the profits for the year ending 30th June, 1930, was Rs.25,000; for 1931, Rs.23,000; and for 1932, Rs.21,000. You are required to close the books of the old firm, and prepare the opening balance sheet of the new company.

5. *Lambda Manufacturing Company* whose directors present the following balance sheet as on the 30th June, 1939, appear to be quite solvent but it is found that they are unable to pay a creditor whose claim amounts to Rs.10,000. This results in a change of directorate who, on investigating the affairs of the company, find the following:—

- (a) Plant and Machinery which should have been depreciated at 5% per annum on the fixed instalment system had not been depreciated for the last ten years.
- (b) Stock has been valued at sale price which is 25% over cost price.
- (c) Investments include 10,000 shares in *A. Co., Ltd.*, of Rs. 10 each, shown on the books of the company at Rs. 1,00,000. But it is found that this company has been in liquidation for some time, and has made a final return of capital of Re. 1 per share, which amount has been credited to the profit and loss account.
- (d) Debts amounting to Rs. 21,000 due by customers have long been barred by limitation.
- (e) All patents held by the company had expired.
- (f) It is found that though cash in hand stands at Rs. 40,000, actually there is a bank overdraft of Rs. 22,000, and the old directors had drawn Rs. 62,000 on various pretexts. Of this sum, only Rs. 37,000 is recoverable.

The new directors decided that in these circumstances it would be best to reorganize the company and propose to reduce the capital as follows: Ordinary shares by Rs. 5 per share, and preference shares by Rs. 4 per share. They also decide to write off the balance of loss by adjusting firstly the reserve account, then the balance on the Profit and Loss account, and lastly Goodwill. This is duly sanctioned, and you are requested to show all the adjustment entries and prepare the new balance sheet.

Balance Sheet of the Lambda Manufacturing Co., Ltd., 30th June, 1933.

	Rs.		Rs.
Capital.—		Goodwill	... 4,00,000
2,00,000 Ordinary		Freehold	... 2,00,000
Shares of Rs. 10 each	20,00,000	Patents	... 50,000
1,00,000 Preference		Plant and Machinery	... 36,00,000
Shares of Rs. 10 each	10,00,000	Investments	... 3,00,000
6% Debentures	... 10,00,000	Stock	... 2,00,000
Sundry Creditors	... 4,50,000	Furniture	... 10,000
Reserve	... 4,00,000	Sundry Debtors	... 1,00,000
Profit and Loss A/c.	... 50,000	Cash in Hand	... 40,000
	<hr/>		<hr/>
	49,00,000		49,00,000

THIRD PAPER

(Commercial Law)

First Half

Examiner—DR. RADHABINOD PAL, M.A., D.L.

The figures in the margin indicate full marks.

Answer Question 3 and ANY TWO of the rest.

1. Define 'consideration'. Examine how far (1) absence of consideration, (2) illegality of consideration, (3) inadequacy of consideration, affects a contract. 10
2. Discuss the principle laid down in *Carlill v. Carbolic Smoke Ball Co.* (1893) 1 Q.B. 256. 10
3. 'In a contractual relation the rights and liabilities of the parties are always referable to their intention.' Comment on this, and examine how far the law relating to measure of damages in case of breach of contract is consistent with this maxim. 20
4. Discuss the principles laid down in *Ertel Bieber & Co. v. Rio Tinto Co.* (1918) A.C. 260. 10
5. Write notes on *any two* of the following:—
 - (i) Doctrine of market overt, (ii) Stoppage in transit, (iii) Vendor's lien, (iv) Warranty. 10
6. 'A surety is a great favourite in law.' Why? 10

Second Half

Examiner—MR. P. N. BANERJEE, M.A., B.L., BAR-AT-LAW.

Answer ANY THREE questions.

1. Define 'bailment'. Write a short note on the responsibility of a railway administration as carrier of goods.
2. Define 'firm'. Examine if an infant can be member of a firm.
3. Give a short account of the legal position of an undisclosed principal in a contract.
4. Enumerate acts of insolvency under the Provincial Insolvency Act.
5. Define a 'promissory note'.
 A signs an instrument in the following terms: 'I promise to pay B or bearer Rs. 5,000.' Examine if a suit on this instrument will be maintainable at the instance of C in whose favour B makes an indorsement.
6. Draw up a memorandum of association for a 'company limited by guarantee'.
7. Name the different modes of winding up a company. What do you mean by the term 'contributory'? Examine the nature of the liability of a contributory.

FOURTH PAPER

(Banking)

The questions are of equal value.

First Half

Examiner—DR. B. RAMCHANDRA RAU, M.A. PH.D.

Answer THREE questions only.

1. Write explanatory notes on *any four* of the following terms:—
(a) garnishee order, (b) finance bill, (c) hidden reserve, (d) banker's lien, (e) nationalization of banking.
2. Discuss the position of the foreign exchange banks in the banking system of this country. Do you advocate the starting of an Indian Overseas Bank?
3. Do you advocate a separate banking code for this country? If so, what would be its general outline?
4. Comment on the gratuitous services of modern banks. State the position of the Indian Joint Stock Banks in this connection.
5. How do Central Banks regulate credit? What initial difficulties would the Central Bank experience if it were to regulate credit in this country?

Second Half

Examiner—MR. A. C. SENGUPTA, M.A.

Answer THREE questions only.

All the questions carry equal marks.

1. In what different capacities does a bank generally serve its customers? Give a brief account of these.
2. Mention the important factors that affect the size of the cash reserve that a bank must keep. Explain how these factors affect the size of the reserve.
3. 'On December 31st, 1931, 20% of the total liabilities of the joint stock banks of England and Wales was represented in their portfolios by bills discounted during the year. . . . Banks in India do not hold such bills to any large extent.'
How do you account for this restricted use of bills in India?
What are the advantages of the employment of funds by commercial banks in the discounting of bills?
4. Give a brief sketch of the organization of the Federal Reserve system of banking in the United States of America.
5. What do you understand by 'open market' operations of central banks? When do central banks resort to such operations, and why?
6. Why has it been considered necessary to have a reserve bank for India? Why could not the Imperial Bank of India perform the functions of a Central Bank? In this connection consider the position of the Bank of England.

(Business Organization)*The questions are equal value.**THREE questions only to be attempted from EACH half.***First Half***Examiner*—DR. MANOMOHAN RAY, M.A., D.Sc. Ph.D.

1. In what category of business organization would you place the recent Restriction Schemes in Tea, Rubber, etc.? What are the main defects of this type of organization, and how are these being counteracted in the above cases?

2. In what way will a Reserve Bank help to improve the conditions in the Indian money market? State briefly your views about the usefulness of the separation of the Issue and Banking departments of the proposed Reserve Bank.

3. Write a short essay on Economic Planning, with special reference to the need of such a plan for Bengal.

4. Discuss the various factors that are to be taken into account in fixing the Life Insurance Premium. What in your view is the investment value of a Life Insurance policy?

5. You are expected to set up an organization for marketing jute, keeping in mind the lack of holding capacity of the growers. State your scheme.

Second Half*Examiner*—MR. P. C. NANDI, B.A. (Cal), B.Sc. (Cantab), CHARTERED ACCOUNTANT.

1. Give briefly an outline of the various aspects of the organization of a manufacturing concern.

2. Discuss Customs Duty as a revenue measure and as a means for protecting infant industries.

3. Discuss the Hire-purchase system of selling commodities.

4. Discuss the arguments for and against the managing agency system in India.

5. Discuss the advantages and disadvantages of fixed and non-fixed investment trusts.

(Industrial Structure and Development.)*The questions are of equal value.***First Half***Examiner—DR. R. M. CHAUDHURI, M.A., PH.D.**Answer ANY THREE questions.*

1. Indicate the factors that contributed to the industrial development of Great Britain during 1760-1850.
2. What are the causes and the advantages of industrial combinations? Do combinations promote the interest of labour? Discuss the potentiality of industrial combinations in India.
3. Examine the causes of the industrial leadership of Germany since the Franco-Prussian War. In what industries particularly has Germany obtained a predominant position in the world market, and why?
4. Briefly indicate the nature of the quota system. How would such a system affect the future development of industries? Illustrate your answer by reference to any industry with which you are familiar.
5. Examine the present position and the future prospects of the Indian sugar industry. Can you justify the imposition of an excise duty on Indian sugar factories?

Second Half*Examiner—DR. P. P. PILLAI, M.B.E., PH.D.**Answer ANY THREE questions.*

1. Indicate briefly the causes of the prevailing world unemployment. What remedies would you suggest to meet the situation?
 2. Describe the salient features of President Roosevelt's Industrial Recovery Campaign, and estimate the value of its contribution to world recovery.
 3. In the light of the principles governing the British Trade Boards Acts, examine the case for the establishment of Wage-Boards in the Indian tea industry.
 4. Determine the influence of the International Labour Organization in shaping India's industrial legislation.
 5. Examine the grounds on which the Indian cotton textile industry has been granted protection. How far is the weakness of the industry due to internal causes?
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(Economic Geography)

The questions are of equal value.

Answer ANY THREE questions from EACH half.

First Half

Examiner—DR. MANOMOHAN RAY, M.A., B.Sc., PH.D.

1. Discuss the present day tendency towards the formation of self-supporting economic units. What do you think of the prospects of the British Empire becoming such a unit? How will India's external trade be affected in such an order?

2. Discuss the factors responsible for the present moribund condition of the world-shipping. What steps, in your opinion, should be taken to bring about an improvement in the condition of this industry?

3. What is your idea about Economic planning? Do you think that the economic condition of India can be improved by adoption of such a planning? If so, what sort of industrial development should be suggested for Bengal?

4. How has the restricted production benefited the Indian jute industry? What has been the effect of it in foreign countries?

5. Discuss the developments in the British steel industry as a result of the adoption of protective measures in Great Britain.

Second Half

Examiner—DR. DWIJENDRA KUMAR SANYAL, M.A., B.COM.

1. What do you know about the new Rubber Restriction Scheme? What is the quota allotted to India, and how is India, both as a producer and consumer, going to be affected by it?

2. Discuss the changes that have taken place in Great Britain since the Ottawa Agreement. Has the Indo-British trade improved in any way by that agreement?

3. State the improvements in agricultural production that have taken place in the Middle-East countries since the Great War. How will India's exports of agricultural products be affected by the same?

4. What effects will the developments of Manchuko have on the economic activities of Japan and China?

5. State briefly the effects of the growth of production of primary goods, both agricultural and mineral, in 'U.S.S.R.' on India's staple exports in the European market.

(Currency.)

The questions are of equal value.

First Half

Examiner—DR. B. RAMCHANDRA RAU, M.A., PH.D.

Answer ANY THREE questions.

1. What reasons do you advocate for the abolition of the gold standard? How do you propose to make it an international standard once again?
2. Examine the economic implications of linking the rupee to the inconvertible pound sterling.
3. Explain the purchasing power parity doctrine. Can it satisfactorily explain all fluctuations in exchange? If not, why not?
4. What is meant by elasticity of currency? How is contraction and expansion of currency secured in this country? Illustrate your answer by reference to the course of events in India since 1927.
5. Criticize *any two* of the alternative standards suggested in lieu of the international gold standard:—
 - (a) The Tabular Standard.
 - (b) International Bimetallism.
 - (c) The Goods Standard.
 - (d) Symmetallism.

Second Half

Examiner—MR. BIJOYKUMAR SARKAR, A.B.

Answer ANY THREE questions.

1. 'Gold is not a base upon which is reared a block of credit that enlarges and shrinks with the length of the base line.' Discuss.
 2. How far do you think it is possible to control the price level through the control of the Central Banking policy?
 3. How do you distinguish between Inflation and Reflation? What do you think about President Roosevelt's policy of Reflation in America?
 4. How 'did the value of silver influence Indian exchange during (a) 1876-93, and (b) 1917-20?
 5. State what you know about the recent controversy with regard to the devaluation of the rupee.
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(Transport.)

The questions are of equal value.

Only THREE questions are to be attempted.

First Half

Examiner—MR. H. D. GHOSH, M.A.

1. What do you mean by (a) State-ownership of railways, and (b) State control of railways? Detail the advantages and disadvantages of private railway enterprise, with special reference to British railways.

2. Describe the evolution of Classification of goods on the British and the American railway systems.

3. Discuss the merits of the 'Absolute Block' and 'Interlocking (signalling)' systems from the points of view of safety and efficiency in railway working. Illustrate by diagrams.

4. 'Elasticity and quick adaptation to the exigencies of business are peculiarities of American rail road operation.' (Ripley.)

How does Prof. Ripley expose the defects of this system in the fixation of railway rates, and what are his views on 'Commercial Competition' in respect to the adjustment of railway rates?

5. What do you understand by the Southern Basing system, the Transcontinental system, and the Port differentials in the fixation of American railway rates?

Second Half

Examiner—MR. J. C. ROSE,

Only THREE questions are to be attempted.

All questions carry equal marks.

1. Comment on—

(a) the development of the different gauges of the railway system in India,

(b) the practicability of adopting a uniform gauge for railways in this country, with special reference to the views expressed on the subject by the Acworth Committee.

2. Describe (a) class rates, (b) adjusted class rates, (c) special rates, and explain how each differs from the others. Comment on the relative advantages or disadvantages of (i) equal mileage, (ii) telescopic, and (iii) lump-sum station to station rates.

3. Explain the constitution and functions of the Indian Railway Rates Advisory Committee. What evidence would you advance to show that a particular railway rate is unreasonable in itself?

4. Comment on the functions of a station goods yard and a marshalling yard. State the location of the Moghalsarai, Bilaspur, and Bhusaval marshalling yards, and detail the more important items of traffic dealt with in each of these yards.

5. Detail (a) the chief sources from which cotton is drawn to the ports of Bombay, Karachi, and Madras, (b) the railway routes by which cotton is ordinarily transported to each of those ports, with particulars of alternative railway routes, if any. Illustrate (a) and (b) by a sketch map or maps.

(Tariffs)

The questions are of equal value.

First Half

Examiner—DR. MANOMOHAN RAY, M.A., D.Sc. PH.D.

Only THREE questions are to be attempted.

1. What do you understand by discriminating protection? To what extent has this principle been followed in India's tariff developments?
2. Trace the growth of Imperial Preference within the British Empire. How is the development of the Iron and Steel industry in India likely to be affected by the Ottawa Agreement?
3. How far is tariff a fruitful source of revenue? Discuss its incidence upon the different strata of society.
4. The growth of economic nationalism everywhere in the world is restricting India's exports to many countries. How then will it be possible for India to adjust her balance of account with the outside world?
5. What were the circumstances that led to the Indo-Japanese Textile Agreement? State briefly the terms of the Agreement.

Second Half

Examiner—DR. R. M. CHAUDHURI, M.A., PH.D.

Only THREE questions are to be attempted.

1. State clearly what you understand by a bilateral trade agreement. In what way is it superior to simple protection? What parts have the quota system and the most favoured nation clause played in the recent trade treaties of Great Britain?
2. It is said that protection is frequently followed by the entry of foreign capital into a country. Discuss the advantages and disadvantages of such capital in countries in different stages of economic development, such as (1) Great Britain, and (2) India.
3. When is an excise duty justified on theoretical grounds? State clearly your views on the recently imposed sugar excise duty in India.
4. What were the circumstances which were responsible for Great Britain's adoption of free trade in the first half of 19th century? In what way have the circumstances changed to compel that country to go in for a protective policy?

5. Write short notes on:—

- (a) Open door area.
 - (b) Most-favoured nation treatment.
 - (c) Free Ports.
 - (d) Economic units.
 - (e) Discriminating protection.
-

(Statistics)

The questions are of equal value.

Only THREE questions are to be attempted from EACH half.

First Half

Examiner—DR. S. M. GANGULI, D.Sc.

1. Draw up a blank table in which could be shown for two years the Indian imports and Exports of two kinds at five ports.
2. What do you understand by the terms balance of trade and invisible exports? Contrast the items composing the invisible exports of the United Kingdom and British India.
3. Define and illustrate the following:—
Arithmetic mean, median, mode, standard deviation, and coefficient of variation.
4. What is meant by the Principle of the Fair Sample? What precautions are necessary in making use of it?
5. Describe carefully how you would proceed to construct an index number of Indian wholesale prices.

Second Half

Examiner—MR. P. C. GHOSH, M.A., B.Sc.

6. For comparing the intensity of unemployment in India with that in Great Britain, what statistics would you require, and how would you correlate them?
7. Assume the following distribution according to age of persons employed in a certain occupation:—

Age.		Number of persons per 1,000.		
Under 15 years		0
15	8
20	48
25	252
35	334
45	223
55	125
65	10
75 and over		0
				<hr/>
				1,000

Estimate by any method of interpolation the relative numbers in the age groups 30 to 35 and 35 to 40 years. State the hypotheses on which the method rests.

8. For the frequency group in Question 7 obtain one measurement of deviation and of asymmetry.

9. The following table shows the frequency distribution of daily earnings of women in the Cotton Industry at Ahmedabad, 1921:—

Daily earnings (annas).				Number of women.		
3	but	under	6	...	...	1
6	9	...	...	133
9	12	...	...	256
12	15	...	...	380
15	18	...	...	212
18	21	...	...	18
Total				...	...

Estimate the median and quartiles. If you have any difficulties with the table, state them and say what assumptions you have made, and what further information you would like to have.

10. Find the correlation between the following values of X and Y ; do not keep more than two decimal places:—

X	Y
6	4
5	4
7	10
9	9
0	11

(Auditing.)

The questions are of equal value.

Answer only THREE questions from EACH half.

First Half

Examiner—MR. G. BASU, B.A., A.S.A.A.

1. How could frauds be perpetrated through the Bought Ledger? State against each example what Audit steps you would take to ascertain whether, in fact, fraud had taken place.

2. How would you verify the existence of the following assets appearing in the Balance Sheet of a Limited Company?—

- Investment in Stocks and Shares,
- Patent Rights and Trade Marks,
- Motor Vehicles, and
- Cash at Foreign Branches.

3. Briefly state the principles that would guide you to determine Profits available for dividend.

4. What do you conceive to be the liability of an Auditor to a third party, who has advanced money on the faith of a certified Balance Sheet in regard to the audit of which there has been negligence? (The certificate was given by the Auditor with the knowledge that in the usual course of business the certified accounts would be exhibited to Banks, Creditors, etc., according to the needs of the occasion).

5. Draft a programme for the audit of a Life Assurance Company, and give the Auditor's report and certificate on the Balance Sheet on the eve of its quinquennial valuation.

Second Half

Examiner—MR. N. CHAKRAHARTI, M.A., A.S.A.A. (Lond.), R.A.

6. You are required to set out the steps you would, as Auditor, take in order to satisfy yourself that (i) Stock had not been overvalued, (ii) Book Debts had not been over-valued, and (iii) Trade Liabilities had not been understated.

7. (a) What are the *Rights* and *Duties* of an Auditor appointed under the Indian Companies Act, 1913?

(b) If a person other than the retiring Auditor has to be appointed Auditor of a Limited Company, what are the formalities that must be observed under Section 144 (6) of the Indian Companies Act, 1913?

(c) At the Annual General Meeting of a Limited Company no Auditor was appointed. What steps must be taken, and by whom, in order that the Company may place before the next Annual General Meeting accounts certified by validly appointed Auditors?

8. State briefly the qualifications of a Public Accountant competent to act as Auditor of a Limited Company, and how they are acquired.

9. (a) What are the circumstances under which you, as an Auditor of a Limited Company, will be prepared to pass payments on account of—

- (i) Underwriting Commission,
- (ii) Interest out of Capital, and
- (iii) Remuneration to Directors for attending Board Meetings?

(b) At the conclusion of your Audit of X. Co., Ltd., you find that you cannot give a 'clean' report. The directors are unwilling to amend the accounts according to your suggestions.

Draft a report to relevant persons embodying 5 points of importance in respect of which the same has to be qualified.

10. A Bank, having been asked by a commercial company to make an advance of Rs. 10,000, instructs you to investigate and report upon the last Balance Sheet of the company, which was as follows:—

Balance Sheet, December 31st, 1930.

	Rs.		Rs.
Capital—		Goodwill at cost	6,000
Authorised and Issued—		Plant and Machinery (at cost)	9,570
5,000 Ordinary Shares of Rs. 10 each, fully paid	50,000	Leasehold Premises at cost, December 2nd, 1928	6,230
Sundry Creditors	9,842	Sundry Debtors, Less Reserve for Bad Debts	21,648
Bank overdraft	1,267	Stock and Work in Progress as certified by Managing Director	12,984
Profit and Loss A/c. (Balance)	647	Bills Receivable	1,240
[There is a contingent liability of Rs. 350 in respect of bills discounted.]		Investments at cost (Deposited with the Bank as security for overdraft)	3,270
		Cash in hand	814
	<hr/> 61,756		<hr/> 61,756

The books have been audited by a reputable firm, and your instructions are that it is not necessary to do any detail checking.

Describe briefly the course of your investigation, and draft your report to the Bank.

(Agricultural Economics)

The questions are of equal value.

First Half

Examiner—RAI BAHADUR B. B. MOOKERJEE.

Answer ANY THREE questions.

1. What are the main causes of agricultural indebtedness in India? Discuss possible remedies.
2. What is the effect of the depression in prices on the indebtedness of the Agriculturist? What are the diverse effects of high prices and low prices of agricultural produce on the economic position of a ryot, of a landlord, and a mahajan?
3. Land, labour, and capital are the main factor for production. Discuss in brief actual position of land the factor with reference to the conditions of India in general and Bengal in particular.
4. How has the Co-operative movement in Bengal been affected by the present depression in the price of food grains? Discuss the position of a Co-operative Society in the existing circumstances.
5. What are the prospects of, and impediments to, large scale farming in India? Discuss particulars with reference to the conditions of any province of it that you know.
6. Summarize briefly the recommendation of the Agricultural Commission on Irrigation. State your own views on the proposal.

Second Half

Examiner—DR. N. GUPTA

1. Draw up the main lines of rural reconstruction for a Bengal village in any portion of the Province that you know.
 2. What do you know of the Land Mortgage Bank? Discuss its possibilities and risks, if any.
 3. What are the main lines on which Co-operative movement in India has progressed? Discuss improvements, if any, that you can suggest.
 4. Take any Province that you know, and discuss the economic value of the crops in it to the agriculturist as a food crop, a money crop, and a fodder crop. What suggestions have you to improve the situation?
 5. What are your views on (a) marketing of agricultural produce in India, (b) improvement of cattle in India, (c) use of mechanical devices in the production of crops in India?
 6. 'Forests are often described as the hand-maiden of agriculture.' Elaborate the statement.
-

(Economic History)

First Half

Examiner—DR. N. SANYAL, M.A. PH.D.

The figures in the margin indicate full marks.

Answer ANY THREE of the following.

1. Trace briefly the development of British Colonial Economic Policy from 1763 to 1914, explaining the motives and methods of expansion, fiscal relations, and course of trade. 16
2. Examine the application of the policy of a 'Conscious National Development' in the field of Indian industry from 1899 to the present day, and indicate in what respects this policy has been found wanting so far. 16
3. Give a short account of the spread of Social Insurance in Germany and Great Britain up to 1914. 16
4. State briefly the history of banking in Japan, and explain the rôle of the State in the organization and functioning of 'ordinary' and 'special' banking institutions. 16
5. 'Labour movement since 1914 is more a struggle for political power than an agitation for bettering the conditions of work and living for wage-earners'. Critically examine this statement, with reference to the organization of labour in Great Britain before and after 1913. 16

Second Half

Examiner—MR. M. K. GHOSH, M.A., B.COM (London)

Answer ANY THREE of the following questions.

1. What were the chief economic effects of the enclosure movements in England during the eighteenth and nineteenth centuries?
2. State the reasons which led to the enactment of the Corn Laws of England, and state also the causes which led to their final repeal.
3. Estimate the influence of the French Revolutionary Wars upon British trade and industries.
4. Discuss how far the condition of the working classes in England was affected by the Industrial Revolution.
5. Trace briefly the growth of the co-operative movement in India, and indicate the difficulties that stand in the way of its rapid growth.

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(Public Finance)

The questions are of equal value.

First Half

Examiner—PROF. P. N. BANERJEE, M.A., D.SC.

Answer ANY THREE questions.

1. Discuss the value and limitations of (a) income, (b) expenditure, and (c) capital, as tests of one's ability to pay taxes.
2. Describe carefully the arrangement now in force for avoiding or mitigating the double taxation of the same income within the British Empire.
3. What are the various forms in which public debts are generally issued? Examine the effect of a large floating debt on the trade and industry of a country.
4. Describe some of the measures that are usually adopted to minimize evasion of taxes.
5. Describe the procedure adopted in the British Parliament for the passing of a Finance Bill. To what extent does this procedure differ from that adopted in the Central legislature of India?

Second Half

Examiner—DR. J. P. NIYOGI, M.A., PH.D.

Answer ANY THREE questions.

1. Describe the value and utility of an independent system of financial audit. Illustrate your answer by reference to the power of the Auditor-General in India.
 2. Briefly describe the principal forms of local taxes in India. In what chief respects do local taxes differ from Central and Provincial taxes?
 3. Trace the development of Indian customs duties since the Great European War.
 4. Describe the limitations on the borrowing powers of the Provinces in India. How far should these restrictions be relaxed to secure autonomy for the Provinces?
 5. Examine some of the more important proposals for allocating income tax receipts between the Central and Provincial Governments in India.
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M. A. & M.Sc. Examinations

1934

PURE MATHEMATICS

FIRST PAPER

Examiners— { MR. P. N. MITRA, M.A.
MR. H. P. BANERJEE, M.Sc.

The questions are of equal value.

N.B.—Full marks for ANY SIX questions.

1. (a) Find a necessary and sufficient condition that

$$f(x) \equiv x^4 + px^3 + qx^2 + rx + s = 0$$

shall have one root the negative of another root. When this condition is satisfied, what are the quadratic factors of $f(x)$?

(b) If the roots of a biquadratic represent the distances of four points on a right line measured from a fixed point on it, prove that when these points form a harmonic range, the roots of Euler's cubic are in A.P.

2. (a) Enunciate Sturm's theorem on the separation of the roots of algebraic equations.

If all the roots of any algebraic equation be real, prove that all the roots of every one of Sturm's auxiliary functions are also real.

- (b) Obtain Sturm's auxiliary functions for the biquadratic

$$x^4 + 4px^3 - 4qx - 1 = 0.$$

Hence or otherwise show that it will have two equal roots if

$$(p+q)^{\frac{2}{3}} - (p-q)^{\frac{2}{3}} = 1.$$

3. (a) Show that for the equation

$$x^n + p_1 x^{n-1} + p_2 x^{n-2} + p_3 x^{n-3} + \dots + p_n = 0,$$

$$S_k - (-1)^k \begin{vmatrix} p_1 & 1 & 0 & 0 & 0 & \dots & 0 \\ 2p_2 & p_1 & 1 & 0 & 0 & \dots & 0 \\ 3p_3 & p_2 & p_1 & 1 & 0 & \dots & 0 \\ \dots & \dots & \dots & \dots & \dots & \dots & \dots \\ (k-1)p_{k-1} & p_{k-2} & p_{k-3} & \dots & \dots & \dots & 1 \\ kp_k & p_{k-1} & p_{k-2} & \dots & \dots & \dots & p_1 \end{vmatrix}$$

where S_k denotes the sum of the k th power of the roots of the given equation.

7. (a) Show that

$$\lim_{n \rightarrow \infty} \frac{n}{\sum_{s=1}^n (a+s)^{\frac{1}{n}}} = 1.$$

(b) If p and q be constant integers, show that

$$\lim_{m \rightarrow \infty} \left\{ \frac{1}{m} + \frac{1}{m+1} + \dots + \frac{1}{pm+q} \right\} = \log p.$$

8. (a) State (without proof) the different theorems on the multiplication of two infinite series.

(b) Discuss the convergence of the series

$$1nz + \frac{n(n-1)}{2!} z^2 + \dots + \frac{n(n-1)\dots(m-n+1)}{n!} z^n + \dots$$

when $|z| = 1$.

9. Illustrate by means of suitable examples the difference between ordinary convergence and uniform convergence.

Show that a power series is uniformly convergent within its circle of convergence. What happens on the circle of convergence?

10. For z complex, prove that

$$\sin z = z \left(1 - \frac{z^2}{\pi^2}\right) \left(1 - \frac{z^2}{2^2 \pi^2}\right) \left(1 - \frac{z^2}{3^2 \pi^2}\right) \dots$$

Hence or otherwise show that

$$\cot z = \frac{1}{z} + 2z \sum_{n=1}^{\infty} \frac{1}{z^2 - n^2 \pi^2}.$$

Show also that

$$\operatorname{cosec}^2 z = \sum_{n=-\infty}^{\infty} \frac{1}{(n\pi + z)^2}.$$

11. (a) Distinguish between the nature of the convergents in continued fractions of the first and second classes.

(b) Evaluate

$$\frac{1}{1+*} \frac{1}{1+*} \dots \frac{1}{2+*} \dots,$$

where the cycle consists of n units followed by 2.

SECOND PAPER

The questions are of equal value.

Examiners— $\left\{ \begin{array}{l} \text{MR. P. L. GANGULY, M.A., B.L.} \\ \text{DR. N. N. SEN, D.Sc.} \end{array} \right.$

Not more than six questions to be attempted.

1. Find the centre of gravity of a circular disc whose density is proportional to the distance from a point on the circumference of the disc.

If the density at any point of a circular disc whose radius is a vary directly as the distance from the centre, and a circle described on a radius as diameter be cut out, prove that the centre of gravity of the remainder

will be at a distance $\frac{6a}{15\pi - 10}$ from the centre.

2. Find the equation of a catenary of equal strength. Show that the polar equations of equilibrium of a string in one plane under forces Pds , Qds , acting along and perpendicular to the radius vector, are

$$\frac{d}{ds} (T \cos \phi) - \frac{T}{r} \sin^2 \phi + P = 0,$$

$$\frac{d}{ds} (T \sin \phi) + \frac{T}{r} \sin \phi \cos \phi + Q = 0,$$

where $\cos \phi = \frac{dr}{ds}$ and $\sin \phi = \frac{r d\phi}{ds}$.

3. Calculate the attraction of a uniform spherical shell at an internal point.

Prove that the law of the inverse square is the only law of attraction for which a spherical shell of uniform thickness and density will produce no resultant attraction on any internal particle.

4. Find the attraction of a thin circular plate of uniform thickness and density on a particle in its plane, the law of attraction being that of the inverse cube of the distance.

5. Prove Laplace's equation $\nabla^2 V = 0$.

If two different masses have the same external level surfaces, the values of their potentials on any one common surface of level are directly proportional to the two masses.

6. Find the resolved accelerations of a point in polar co-ordinates. A particle of mass m is suspended from a fixed point O by a string of length a , and from m is suspended another particle of mass m' by a string of length b . If a horizontal velocity be suddenly communicated to m , show that the tensions of the strings are immediately increased by amounts which are in the ratio

$$1 + \frac{mb}{m'(a+b)} : 1.$$

7. What are *harmonic oscillations*?

Show how to find the *amplitude* and the *period* of the oscillation.

A heavy particle P is suspended at rest from a point A by an elastic string whose initial and unstretched length is a . The point A at the time $t=0$ begins to oscillate up and down, so that its displacement at the time t is $c \sin \lambda t$.

Prove that the length of the string at the time t is

$$a + \frac{g}{n^2}(1 - \cos nt) - \frac{cn\lambda}{n^2 - \lambda^2} \sin nt + \frac{cn^3}{n^2 - \lambda^2} \sin \lambda t.$$

8. A particle is projected horizontally with velocity V along the inside of a rough vertical circle from the lowest point, prove that if it complete the circuit it will return to the lowest point with a velocity v given by

$$v^2 = V^2 e^{-4\mu\pi} - 2ag(2\mu^2 - 1)(1 - e^{-4\mu\pi})/1 + 4\mu^2.$$

9. Find the differential equation of the orbit of a particle under the action of a central force.

In a central orbit the force is $\mu u^3(3 + 2a^2 u^2)$; if the particle be projected at a distance a with a velocity $\sqrt{\frac{5\mu}{a^3}}$ in a direction making $\tan^{-1} \frac{1}{2}$ with the radius, show that the equation to the path is $r = a \tan \theta$.

10. State Kepler's laws.

If P be the mass of a planet, S the mass of the sun, T the time of revolution of the planet round the sun, D its mean distance from the sun, prove

$$T = \frac{2\pi}{\sqrt{\gamma(S+P)}} D^{\frac{3}{2}}$$

Show that the velocity of a particle moving in an ellipse about a centre of force in the focus is compounded of two constant velocities,

1. perpendicular to the radius and $\frac{e\mu}{h}$ perpendicular to the major axis.

THIRD PAPER

The questions are of equal value.

Six questions are to be attempted, THREE from EACH half.

First Half

Examiner—DR. S. N. GANGULY, D. SC.

1. (a) Prove that the two straight lines (l, m, n) and (l', m', n') in trilinear co-ordinates will be at right angles, if

$$ll' + mm' + nn' - (mn' + m'n) \cos A - (nl' + n'l) \cos B - (lm' + l'm) \cos C = 0.$$

(b) Show that the trilinear equation of the straight line joining the in-centre and the circumcentre of the triangle of reference is

$$\Sigma a(\cos B - \cos C) = 0.$$

2. (a) Find the condition that the general equation of the second degree in areal co-ordinates should represent a circle.

(b) Find the equation of the circle with respect to which the triangle of reference is self-conjugate, and show that this circle will be imaginary unless the triangle of reference be obtuse-angled.

3. (a) Prove that a system of conics through four fixed points is cut by any transversal in pairs of points which form an involution.

To whom is this theorem due?

State the reciprocal theorem.

(b) Prove and generalize by projection the theorem:

The locus of the centre of a rectangular hyperbola circumscribing a triangle is the nine-point circle of the triangle.

4. (a) If the line $lx + my + n = 0$ satisfies the relation $(a, b, c, f, g, h)(l, m, n)^2 = 0$, shew that its envelope is an ellipse, parabola, or hyperbola according as

$$\begin{vmatrix} c & a & h & g \\ & h & b & f \\ & & g & f & c \end{vmatrix} \begin{matrix} > \\ = \\ < \end{matrix} 0.$$

(b) Show that the pair of lines $ax^2 + 2hxy + by^2 = 0$ should be harmonically conjugate with

$$\text{if } \begin{matrix} a'x^2 + 2h'xy + b'y^2 = 0, \\ ab' + a'b = 2hh'. \end{matrix}$$

5. What is meant by the Jacobian of three conics?

Find its equation, and prove that if the three conics all pass through two given points, their Jacobian will reduce to a straight line and a conic.

Discuss the case of three circles.

Second Half

Examiner—MR. M. M. GHOSH

1. Define the *deficiency* of a curve and prove that it can never be negative.

Calculate the deficiency of non-degenerate curve of the n th degree, having δ nodes and k cusps.

Determine the deficiency of the curve

$$x^3 + y^3 - 3axy.$$

2. How do you define the Hessian of a curve and why is it so called?

Deduce its equation for the curve $f(x, y, z) = 0$.

Prove that the Hessian of the cubic

$$x^4 + y^3 + z^3 + 6mxyz = 0$$

is

$$x^3 - y^3 + z^3 - \frac{1+2m^3}{m^3}xyz = 0,$$

and show that the curve and its Hessian have the same points of inflexion.

3. (a) Define a Singular Focus of a curve, and prove that the locus of the singular focus of a circular curve of order n , passing through $\frac{1}{2}n(n+3) - 3$ other points, is a circle.

(b) Prove that the locus of a point whose distances (r_1, r_2, r_3) from three fixed points are connected by the relation $lr_1 + mr_2 + nr_3 = 0$, is a Bicircular Quartic, having those fixed points for foci.

4. (a) Prove that the inverse of a conic with respect to any point on the curve is a Circular Cubic, whose real asymptote is parallel to the tangent of the conic at the centre of inversion.

(b) Show that the six nodal tangents to a Trinodal Quartic touch a conic.

5. (a) Defining a Logocyclic Curve as the inverse of a rectangular hyperbola, obtain its Cartesian equation, and show that every nodal cubic can be projected into a logocyclic curve.

(b) Show how you can trisect an angle with the help of a Conchoid of Nicomedes.

FOURTH PAPER

The questions are of equal value.

Attempt SIX questions, THREE from EACH half.

First Half.

Examiner—MR. B. M. SEN, M.A., M.Sc.

1. (a) Substantiate the following statements:—

(i) That three given right lines can, in general, be intersected by an infinite number of right lines, which trace out a quadric as their locus.

(ii) That the number of *common* transversals of four given right lines is either two or infinite.

(b) Show that the four straight lines, represented respectively by the four pairs of equations:

$$\left. \begin{aligned} \frac{x}{a} + \frac{z}{c} &= 1 + \frac{y}{b}, \\ \frac{x}{a} - \frac{z}{c} &= 1 - \frac{y}{b}, \end{aligned} \right\} \quad \left\{ \begin{aligned} \frac{x}{a} + \frac{z}{c} &= 2 \left(1 + \frac{y}{b} \right), \\ \frac{x}{a} - \frac{z}{c} &= \frac{1}{2} \left(1 - \frac{y}{b} \right), \end{aligned} \right.$$

$$\left. \begin{aligned} \frac{x}{a} + \frac{z}{c} &= 3 \left(1 + \frac{y}{b} \right), \\ \frac{x}{a} - \frac{z}{c} &= \frac{1}{3} \left(1 - \frac{y}{b} \right), \end{aligned} \right\} \quad \left\{ \begin{aligned} \frac{x}{a} - \frac{z}{c} &= 4 \left(1 + \frac{y}{b} \right), \\ \frac{x}{a} - \frac{z}{c} &= \frac{1}{4} \left(1 - \frac{y}{b} \right), \end{aligned} \right.$$

actually admit of an *infinity* of common transversals. And find their *general* equation.

2. (a) Construct the equation of the cylinder, which envelopes the ellipsoid

$$\frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z^2}{c^2} = 1,$$

and has its generators parallel to the direction (l, m, n) .

(b) Express the condition that the cylinder may be a surface of revolution, and deduce or prove directly that the conicoid has altogether *six* enveloping right circular cylinders. How many of these are real?

3. (a) Prove that the three quadrics of the confocal system

$$\frac{x^2}{a^2 + \lambda} + \frac{y^2}{b^2 + \lambda} + \frac{z^2}{c^2 + \lambda} = 1,$$

which pass through a given point $P(\alpha, \beta, \gamma)$, intersect one another orthogonally.

(b) If $\lambda_1, \lambda_2, \lambda_3$ be the parameters of the three confocals associated with P , calculate the expressions

$$\lambda_1 + \lambda_2 + \lambda_3, \quad \lambda_2\lambda_3 + \lambda_3\lambda_1 + \lambda_1\lambda_2, \quad \lambda_1\lambda_2\lambda_3$$

in terms of α, β, γ ; and make sure that, when the point P moves subject to the condition

$$\lambda_1^2 + \lambda_2^2 + \lambda_3^2 = \text{const.},$$

its locus is a quartic surface. Also find the equation of this surface.

4. (a) Prove that the envelope of a two-parameter family of surfaces

$$f(x, y, z, u, v) = 0$$

can be obtained by eliminating the parameters u, v from the above equation, joined to the two derived equations

$$\left. \begin{aligned} \frac{df}{du} &= 0, \\ \frac{df}{dv} &= 0. \end{aligned} \right\}$$

(b) Verify that the envelope of the ∞^2 of planes

$$(uv + 6)x + (u - 2)y + (v - 3)z + 5 = 0$$

is a quadric. Does this envelope touch the plane at infinity? If so, find the direction of the point of contact.

5. (a) A surface being given in the parametric form, work out the differential equation of its asymptotic lines in the form:

$$Ldp^2 + 2Mdp dq + Ndq^2 = 0,$$

where L, M, N are the secondary magnitudes.

(b) For the hyperboloid of one sheet given by

$$\left. \begin{aligned} x &= a \cos p \sec q, \\ y &= b \sin p \sec q, \\ z &= c \tan q, \end{aligned} \right\}$$

calculate the quantities L, M, N , and integrate the equation of the asymptotic lines in the form:

$$p \pm q = \text{const.}$$

Can you show that these curves are all right lines?

6. Prove that the equation

$$5x^2 - 4y^2 + 5z^2 + 4yz - 14zx + 4xy + 16x + 16y - 32z + 8 = 0$$

represents a pair of planes which pass through the line

$$x + 3 = y = z + 1$$

and are inclined at an angle $2 \tan^{-1} \sqrt{2}$.

Second Half

Examiner—MR. B. N. PAUL.

1. Taking the tangent, principal normal and binormal of a twisted curve at any point as the axes of co-ordinates find expressions for the co-ordinates of the consecutive point in terms of the arc and the radii of curvature and torsion.

Prove that the shortest distance between two consecutive principal normals divides the radius of curvature into segments which are in the duplicate ratio of the radii of curvature and torsion.

2. Prove that the loxodromic curves (i.e. those which intersect the meridian lines at constant angle) on a surface of revolution

$$z = f(r)$$

are given by the equation

$$a \int \frac{1}{r} \sqrt{1+f'^2} dr + b\phi + c = 0,$$

where z , r , ϕ are the cylindrical co-ordinates, and a , b , c constants.

Find the loxodromic curves on the surface

$$x = u \cos v, \quad y = u \sin v, \quad z = a \cosh^{-1} u$$

and find the equations of the surface when referred to an orthogonal system of these curves.

3. Find an expression for the radii of curvature at any point of the surface $z = f(x, y)$.

Prove that the specific curvature at any point on the paraboloid $2z = x^2/a + y^2/b$, where it is cut by the cylinder $x^2/a^2 + y^2/b^2 = 1$ is $1/4ab$.

4. What are the centro-surfaces of a given surface? Prove that the two curves on either sheet which corresponds to lines of curvature on the original surface are conjugate to one another, but are not, in general, lines of curvature on either sheet.

5. Define the terms geodesic and geodesic curvature. Two surfaces touch along a curve which is a geodesic on one of them. Prove that it is a geodesic on the other.

Prove that the geodesic curvature at the origin of the section of the surface $2z = ax^2 + by^2$ by the plane

$$lx + my + nz = 0$$

is

$$\frac{n(a^2l^2 + b^2m^2)}{(l^2 + m^2)^{\frac{3}{2}}}.$$

. FIFTH PAPER

Examiners— $\left\{ \begin{array}{l} \text{MR. S. C. GHOSH, M.A.} \\ \text{MR. M. GUPTA, M.Sc.} \end{array} \right.$

The questions are of equal value.

Answer SIX questions only.

1. Prove that a *bounded monotone sequence* is convergent.

Prove the following:—

$$(i) \quad \lim_{n \rightarrow \infty} \frac{a_{n+1}}{a_n} = \lim_{n \rightarrow \infty} \frac{1}{(a_n)^n},$$

provided the former limit exists and the elements of the sequence $\{a_n\}$ are positive. Explain why the elements should be positive.

$$(ii) \quad \lim_{n \rightarrow \infty} \frac{a_n}{b_n} = \lim_{n \rightarrow \infty} \frac{a_{n+1} - a_n}{b_{n+1} - b_n},$$

provided the latter limit exists and

$$\lim_{n \rightarrow \infty} \frac{1}{a_n} = \lim_{n \rightarrow \infty} \frac{1}{b_n} = 0$$

and also the sequence $\{b_n\}$ is monotone ascending.

2. Explain what is meant by the *oscillation* of a function at a point.

If a function $f(x)$ is continuous in the interval (a, b) , it is possible to decompose (a, b) into a *finite* number of sub-intervals in each of which the oscillation is less than a pre-assigned positive number. Prove this.

Shew that the function $f(x)$, where

$$\begin{aligned} f(x) &= 0 \text{ when } x=0 \\ &= \sin \frac{\pi}{x}, \text{ elsewhere,} \end{aligned}$$

passes through every value between -1 and $+1$ in *any* neighbourhood of the origin but is discontinuous at $x=0$.

3. State and prove Euler's theorem on *homogeneous function* in its most general form.

If $V = Ay^3 + 3By^2x + 3Cyx^2 + Dx^3$, prove that

$$\begin{aligned} \frac{\partial^3 V}{\partial x^3} \cdot \left(\frac{\partial V}{\partial y} \right)^2 &- 2 \frac{\partial^2 V}{\partial x \partial y} \cdot \frac{\partial V}{\partial x} \cdot \frac{\partial V}{\partial y} + \frac{\partial^2 V}{\partial y^2} \cdot \left(\frac{\partial V}{\partial x} \right)^2 \\ &= 54V \end{aligned} \quad \left| \begin{array}{ccc} x^2, & -xy, & y^2 \\ A, & B, & C \\ B, & C, & D \end{array} \right.$$

4. Shew that the function $u = xe^y + x \sin y$ does not possess an *extremum*.

A triangular space is to be diminished by fencing off the corners, each fence being circular and having the nearest corner as centre; shew how to leave the *maximum* possible central space with a given length of fence.

5. Prove that for the ellipse of semi-axes a and b the radius of curvature at any point is $\frac{(rr')^{\frac{3}{2}}}{ab}$, where r and r' are the focal distances of the given point.

Obtain the equations to the two parabolas whose axes are respectively parallel to the co-ordinate axes and which have *contact of the second order* with the circle $x^2 + y^2 = 5a^2$, at the point $x = a$, $y = 2a$.

6. Enunciate and prove Rolle's theorem *rigorously*, and deduce the *Law of the Mean* from it.

Examine whether the Mean Value Theorem is applicable to the functions $x + |x|$ and $x^{\frac{3}{2}}$ in any interval including the origin.

7. Explain Darboux's theorem and prove it for the *upper integral* of a bounded function defined in a finite interval. Deduce from it a necessary and sufficient condition that such a function may be integrable according to Riemann.

Obtain in $(0, 1)$ the upper and lower integrals of the function $f(x)$, where

$$f(x) = 1, \text{ when } x = 1, \frac{1}{2}, \frac{1}{3}, \dots, \frac{1}{n}, \dots$$

$$= 0, \text{ elsewhere.}$$

8. Enunciate and prove the *fundamental theorem* of the *Integral Calculus* for a continuous function defined in a finite interval.

Shew that

$$\int_0^\infty \frac{x^{2m} dx}{1+x^{2n}} = \frac{\pi}{2n \sin \frac{2m+1}{2n} \pi}, \quad (m < n).$$

9. If at a point $x = c$ in (a, b) , the function $f(x)$ is not bounded and

$$F(x) = \int_a^x f(x) dx$$

is continuous in (a, b) , shew that

$$\int_a^b f(x) dx = F(b) - F(a).$$

Discuss the convergence of

$$\int_0^{\frac{\pi}{2}} \sin^m x \cos^n x \, dx$$

and evaluate it.

10. Explain how you can change the *order* of integration in a *double* integral.

Change the order of integration in

$$\iint_R (x-y)^n f(y) dx dy,$$

where the *field* of integration R is the region enclosed between the curves.

$$x = \sqrt[n]{X}, \quad y = x^n, \text{ and } y = x.$$

Establish the formula

$$\int_{x_0}^X dx \int_{x_0}^x (x-y)^n f(y) dy = \int_{x_0}^X \frac{(x-y)^{n+1}}{n+1} \cdot f(y) dy.$$

11. Find the value of the multiple integral

$$\iiint \dots x^{l-1} y^{m-1} z^{n-1} \dots dx \, dy \, dz \dots,$$

where the variables x, y, z, \dots take positive values independently of one another but subject to the condition

$$x + y + z + \dots \leq 1.$$

Evaluate $\int \frac{ds}{p}$, where ds represents an element of the surface, and

p the perpendicular from the origin upon the tangent plane of the element, the integral being extended over the whole surface of the ellipsoid

$$\frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z^2}{c^2} = 1.$$

12. Give a brief sketch of the History of Fourier series.

Prove that

$$e^{kx} = \frac{2}{\pi} \sum_{n=1}^{\infty} \frac{n}{k^2 + n^2} (1 - e^{k\pi} \cos n\pi) \sin nx,$$

and specify the interval in which it holds good.

SIXTH PAPER

Examiners— $\left\{ \begin{array}{l} \text{DR. H. D. BAGCHI, M.A., PH.D.} \\ \text{DR. R. SIDDIQUE, M.A., PH.D.} \end{array} \right.$

[N.B.—Answer ANY SIX questions. The TENTH question carries 20 marks and all the other questions carry 16 marks each.]

1. (a) Given that the equation

$$y(2x - y - 1) dx + x(2y - x - 1) dy = 0$$

has an integrating factor of the form $f(x+y)$, find it and integrate the equation.

- (b) Integrate completely the equation

$(x \sin x + \cos x) \frac{d^2 y}{dx^2} - x \cos x \frac{dy}{dx} + y \cos x = \sin x (x \sin x + \cos x)$, given that the left hand side vanishes when $y = x$, and when $y = \cos x$.

2. Solve by means of power series the equation

$$x \frac{d^2 y}{dx^2} - (p-1) \frac{dy}{dx} - y = 0,$$

(i) when p is not an integer, (ii) when p is an integer, obtaining for this case one integral in the form

$$y = 1 + \sum_{n=1}^{n=p-1} \frac{x^n}{n! (1-p)(2-p)\dots(n-p)} + \sum_{n=p}^{\infty} \frac{x^n}{n! (n-p)!} (\log z - s_n - s_{n-p} + s_{p-1}),$$

where

$$s_0 = 0, 0! = 1 \text{ and } s_n = 1 + \frac{1}{2} + \frac{1}{3} + \dots + \frac{1}{n}.$$

3. (a) Prove that the differential equation

$$x \frac{d^2 y}{dx^2} - (3x^2 + 1) \frac{dy}{dx} + 2x^3 y = 0$$

has two non-zero solutions, one of which is the square of the other, and hence obtain the complete solution.

- (b) Obtain in the form of an integral, a solution of

$$\frac{d^2 y}{dt^2} + ky = f(t),$$

which satisfies the initial conditions

$$y(0) = c, \left[\frac{dy}{dt} \right]_{t=0} = d.$$

4. (a) Find the general solution of

$$(y+z-1)yz \, dx + (z+x-1)zx \, dy + (x+y-1)xy \, dz = 0.$$

- (b) Determine the surface which satisfies the equation

$$x(y^2+z)p - y(x^2+z)q = z(x^2-y^2),$$

and contains the straight line $x=y$, $z=k(\neq 0)$,
where

$$p = \frac{\partial z}{\partial x}, \quad q = \frac{\partial z}{\partial y}.$$

5. (a) Find the general solution of

$$y^2q = (p-1)(pxy - p + 1),$$

and determine whether it includes the solution

$$z = x - y + 2\sqrt{1 - xy}.$$

- (b) Integrate the equation

$$s^2 - rt = a^2,$$

where

$$r = \frac{\partial^2 z}{\partial x^2}, \quad s = \frac{\partial^2 z}{\partial x \partial y}, \quad t = \frac{\partial^2 z}{\partial y^2}.$$

6. Prove that if
- P_n
- is Legendre's coefficient of integral order
- n
- ,

$$\int_{-1}^{+1} P_n(x) P_m(x) dx = 0 \text{ or } \frac{2}{2n+1}$$

according as $m \neq n$ or $m = n$.

Prove conversely that if $p_n(x)$ is a polynomial of degree n , such that for every polynomial $f_m(x)$ of degree less than n ,

$$\int_{-1}^{+1} p_n(x) f_m(x) dx = 0,$$

then p_n is a constant multiple of P_n .

Deduce that

$$n! P_n(x) = x \frac{d^n}{d(x^2)^n} \left\{ x^{2n-1} (x^2 - 1)^n \right\}.$$

7. (a) Prove that all zeros of the polynomial
- $P_n(x)$
- are real, distinct and lie between
- -1
- and
- $+1$
- .

- (b) Shew that if

$$f(x) = 0 \text{ for } -1 \leq x \leq 0,$$

and

$$f(x) = x \text{ for } 0 \leq x \leq 1,$$

then

$$f(x) = \frac{1}{2^2} + \frac{1}{2} P_1(x) + \frac{5}{2^4} P_2(x) - \frac{2 \cdot 1 \cdot 9}{2^5 \cdot 3 \cdot 1 \cdot 1} P_4(x) \\ + \frac{4 \cdot 1 \cdot 13}{2^7 \cdot 4 \cdot 1 \cdot 2 \cdot 1} P_6(x) - \dots + \dots$$

8. (a) Establish the formula

$$Q_n(z) = \frac{1}{2} P_n(z) \log \frac{z+1}{z-1} - R_{n-1},$$

where R_{n-1} is a polynomial of degree $n-1$ in z .

(b) Simplify the expression

$$(1-z^2) \frac{d^2 R_{n-1}}{dz^2} - 2z \frac{d R_{n-1}}{dz} + n(n+1) R_{n-1}$$

and reduce it to the form

$$2 P_n'(z);$$

deduce or find otherwise the complete primitive of the differential equation

$$(1-z^2) \frac{d^2 y}{dz^2} - 2z \frac{dy}{dz} + n(n+1)y = 2P_n'(z).$$

9. Establish *any two* of the following summations :—

$$(i) \sum_{m=0}^{m=n} (2m+1) P_m(x) P_m(y) \\ = (n+1) \cdot \frac{P_{n+1}(x) P_n(y) - P_n(x) P_{n+1}(y)}{x-y};$$

$$(ii) \sum_{m=0}^{m=n} (2m+1) P_m(x) Q_m(y) = \frac{1}{y-x} - R_n(x, y);$$

$$(iii) \sum_{m=0}^{m=n} (2m+1) Q_m(x) Q_m(y) \\ = \frac{1}{2(y-x)} \cdot \log \frac{(x+1)(y-1)}{(x-1)(y+1)} - R_n'(x, y),$$

where

$$R_n(x, y) \equiv (n+1) \cdot \frac{P_{n+1}(x) Q_n(y) - P_n(x) Q_{n+1}(y)}{y-x},$$

and

$$R_n'(x, y) \equiv (n+1) \cdot \frac{Q_{n+1}(x) Q_n(y) - Q_n(x) Q_{n+1}(y)}{y-x}.$$

10. (a) Explain, after Gauss and Prasad, a method of developing a homogeneous function $f_n(x, y, z)$ of rectangular cartesian co-ordinates (x, y, z) in the form :

$$f_n(x, y, z) = V_0 + r^2 V_2 + r^4 V_4 + \dots,$$

where

$r^2 \equiv x^2 + y^2 + z^2$ and V_r is a solid harmonic of degree r .

(b) Expand

$$XYZ(X^2 + Y^2) + Z(X^2 + Y^2 + Z^2)^2$$

in the form :

$$V_0 + r^2 V_2 + r^4 V_4,$$

and determine the harmonics V_1 , V_3 , and V_5 . Prove that the equation $V_5 = 0$, interpreted geometrically, defines an improper quintic cone compounded of three planes and a quadric cone, containing triads of perpendicular generators.

[N.R.—Remember the relation

$$\nabla^2 (r^m V_n) = m(m+2n+1)r^{m-2}V_n,$$

where V_n is a solid harmonic of degree n .]

(Functions of a Real Variable—First Paper)

SEVENTH PAPER

$$\text{Examiners—} \begin{cases} \text{MR. H. P. BANERJI, M.Sc.} \\ \text{MR. M. GUPTA, M.Sc.} \end{cases}$$

The questions are of equal value.

Answer six questions only.

1. How does Cantor define *equality* and *inequality* of two *real* numbers? Deduce that of two real numbers one must be *greater* than, *equal* to or *less* than the other.

Prove that $\lim_{n \rightarrow \infty} a_n \leq \lim_{n \rightarrow \infty} b_n$, when $a_n < b_n$, $n = 1, 2, 3, \dots$

2. Define an *isolated* set and shew that it is *enumerable*.

Prove the following:—

(i) No set can have an isolated set as its derivative.

(ii) Two closed sets whose m th and n th derivatives are identical can differ by at most an enumerable set. How do you modify this result when the sets are not closed?

3. Shew that the *points of condensation* (Lindelöf) of a given set form a *perfect* set.

Prove that all the positive decimal fractions (> 1) which can be written with the two digits 0 and 1 only, form a nondense perfect set in $(0, 1)$. How do you determine the *contiguous* intervals of this set?

4. Obtain the necessary and sufficient condition that a given set may be *measurable*.

Prove that the following sets are measurable:—

- (i) A *non-dense closed* set.
- (ii) The set of *transcendental* numbers in $(0, 1)$.
- (iii) The set common to an enumerably infinity of measurable sets.

N.B.—Only the outlines of proof need be given.

5. Prove *any two* of the following:—

- (i) The complement of a set of the *first category* is everywhere dense.
- (ii) The 3-dimensional continuum has the same *power* as the 1-dimensional continuum.
- (iii) A measurable set is made up of a set *metrically dense-in-itself* and of a *discrete* set, either of which may be non-existent.

6. Define a pointwise discontinuous function and show that the points of continuity of a pointwise discontinuous function form an ordinary inner limiting set.

Let the numbers of the interval $(0, 1)$ be expressed as finite or infinite decimals $x = .a_1 a_2 \dots a_n \dots$ and let

$$f(x) = .0a_1 0a_2 0a_3 \dots$$

Prove that the function is pointwise discontinuous.

7. (a) In $(0, 1)$ let

$$x = \frac{a_1}{3} + \frac{a_2}{3^2} + \dots + \frac{a_n}{3^n} + \dots$$

(a 's being either 0 or 2) and let

$$f(x) = \frac{1}{2} \left(\frac{a_1}{2} + \frac{a_2}{2^2} + \dots + \frac{a_n}{2^n} + \dots \right);$$

and in an interval not containing the points x , let $f(x)$ have the same value everywhere as at the end points. Prove that $f(x)$ is continuous but not absolutely continuous in $(0, 1)$.

(b) Apply Cantor's method of condensation of singularities to obtain a function having a differential co-efficient in $(0, 1)$ and having this differential coefficient discontinuous at every rational point in $(0, 1)$.

8. Distinguish between a proper and an absolute maximum of a function and show that the proper maxima and minima of a continuous function form an enumerable or a finite set of points.

Show that in the case of a continuous function which has an infinite number of oscillations, there can only be a finite number, of which the amplitude exceeds an arbitrarily small fixed number.

9. If $f(x)$ is continuous in (a, b) and one of its derivatives is non-negative in the interval, prove that $f(a) \leq f(b)$. Hence or otherwise show that the derivatives and incremental ratios of a continuous function have the same bounds in any interval.

Show also that if one of the derivatives of $f(x)$ is continuous at a certain point, then $f(x)$ has a differential coefficient at that point.

10. What is meant by the total differentiability of $f(x, y)$ at (x_0, y_0) ? Show by an example that the existence of

$$\frac{\partial f}{\partial x} \text{ and } \frac{\partial f}{\partial y} \text{ at } (x_0, y_0)$$

is not sufficient for the total differentiability of $f(x, y)$ at (x_0, y_0) .

$$\text{If } f(x, y) = \frac{xy}{\sqrt{x^2 + y^2}}, \quad x \neq 0, y \neq 0 \text{ and } f(0, 0) = 0,$$

examine $f(x, y)$ for total differentiability and for interchange of the order of differentiation at the origin

(Theory of Functions of a Real Variable—Second Paper.)

EIGHTH PAPER

Examiners— $\left\{ \begin{array}{l} \text{PROF. G. PRASAD, M.A., D.Sc.} \\ \text{DR. LAKSHINARAYAN, M.A., D.Sc.} \end{array} \right.$

You are required to attempt the EIGHTH and TENTH questions; full marks may be obtained by answering these and ANY FOUR of the remaining questions.

1. Prove that the upper Riemann integral

$$\int_a^x f(x) dx$$

is continuous and of bounded variation in (a, b) . Also, at any point of (a, b) at which $f(x)$ is continuous, prove that the upper integral possesses a differential coefficient equal to $f(x)$.

2. (a) If $f(x)$ and $\phi(x)$ be two functions integrable (R) in (a, b) and $|f(x)| \leq |\phi(x)|$ for every value of x , prove that

$$\left| \int_a^b f(x) dx \right| \leq \int_a^b |\phi(x)| dx.$$

(b) If a sequence of functions $\{f_n(x)\}$, all integrable (R) in the interval (a, b) , converges uniformly in that interval to the bounded function $f(x)$, prove that

$$\int_a^b f(x) dx = \lim_{n \rightarrow \infty} \int_a^b f_n(x) dx.$$

3. If $f(x)$ be a summable function defined for the measurable linear set E , such that $f(x) \geq 0$ in E , prove that the set of points defined by $0 < y < f(x)$ has for its plane measure the value of the Lebesgue integral

$$\int_E f(x) dx.$$

4. Prove that the necessary and sufficient conditions that $F(x)$ should be an indefinite Lebesgue integral in (a, b) are that (i) $F(x)$ should be of bounded total variation in (a, b) , (ii) the total variation of $F(x)$ over any set of points in (a, b) of measure zero should be zero.

5. Write down the necessary and sufficient conditions for the convergence of an improper integral. Examine the following integrals for convergence:—

$$\text{i) } \int x^k e^{-x^n} dx,$$

where k and n are numbers greater than 0.

$$\text{(ii) } \int_0^{\frac{\pi}{2}} \left(\sin \frac{1}{x} - \frac{1}{x} \cos \frac{1}{x} \right) dx.$$

$$\text{(iii) } \int_{-\infty}^{\infty} x^{\frac{1}{2}} dx.$$

6. Define a double integral and a repeated integral.

Let G denote the rectangle bounded by

$$x=0, x=1, y=0, y=1,$$

and let $f(x, y) = 1$ for rational values of x and $f(x, y) = 2y$ for irrational values of x .

Investigate whether the following integrals exist:—

$$\text{(i) } \int_G f(x, y) d(x, y).$$

$$\text{(ii) } \int \int f(x, y) dx dy.$$

7. (a) Prove (by giving an example) that a series may not be uniformly convergent in an interval and may still represent a continuous function in that interval. Also prove (by giving examples) that such a series may be integrable term by term or may not be integrable term by term.

(b) Prove that both the mixed differential coefficients,

$$\frac{\partial^2 F}{\partial x \partial y}, \quad \frac{\partial^2 F}{\partial y \partial x},$$

of

$$F(x, y) \equiv \int_0^y du \int_0^x \cos \left\{ \log \left(\log \frac{1}{t^2} + \log \frac{1}{u^2} \right) \right\} dt$$

are non-existent at $(0, 0)$

8. Establish the theorem of Riemann: If $\phi(x)$ be an integrable and bounded function in an interval (a, β) , then

$$\lim_{\mu = \infty} \int_a^\beta \phi(x) \sin \mu x dx = 0.$$

Hence deduce that the necessary and sufficient condition for the convergence of the Fourier series corresponding to $f(x)$ in the interval $(-\pi, \pi)$ to S is that

$$\lim_{\mu = \infty} \int_0^\epsilon \phi(t) \frac{\sin \mu \pi t}{t} dt = 0,$$

where ϵ is a small positive quantity and

$$\phi(t) = f(x + 2t) + f(x - 2t) - 2S.$$

9. Discuss the question of the convergency at $x=0$ of the Fourier series corresponding to $f(x)$ in the following cases:—

(a) $f(x) = x^{\frac{3}{2}} \cos \frac{1}{x}$ for $x \neq 0$, $f(0) = 0$.

(b) $f(x) = \cos \left(\log \frac{1}{x} \right)$ for $x \neq 0$, $f(0) = 0$.

10. Prove carefully the divergence at $t=0$ of the Fourier cosine series corresponding to $f(t)$ in any one of the following cases:—

(a) $f(t) = \sum_{r=1}^{\infty} \frac{\sin(2r^2 t)}{r^2}$, $0 < t < \pi$, $f(-t) = f(t)$.

(b) $f(t) = \sum_{r=1}^{\infty} \frac{1}{r^2} \phi(M_r, m_r, t)$,

where

$$\phi(M, m, t) = \sum_{n=1}^m \cos(M + m - n + 1)t - \sum_{n=1}^m \cos(M + m + n)t,$$

$$m_r = 2^{r-1}, M_1 = 0, M_r = 2(m_1 + m_2 + \dots + m_{r-1}) \text{ for } r > 1.$$

11. Prove carefully that the Fourier series corresponding to a continuous function in the interval $(-\pi, \pi)$ is summable $(C\ 1)$ in that interval.

12. State the theorem of Parseval and the Riesz-Fischer theorem, and give an outline of the proof of *any one* of them.

13. Write a historical essay on the various theories of integration known to you and on their influence on the development of the theory of Fourier series.

(Theory of Groups—First Paper)

SEVENTH PAPER

Examiners— $\begin{cases} \text{MR. M. GHOSH, M.Sc.} \\ \text{MR. N. K. MAJUMDAR, M.A.} \end{cases}$

The questions are of equal value.

Candidates are required to answer SIX questions only, TWO of which must be the SECOND and the TENTH.

1. (a) Define an *element* and a *group*, giving examples.

(b) If $A^2 \equiv A + A + A + \dots$, show that A is a group, where $A = a_1 + a_2 + \dots + a_r$, r being finite.

(c) If $ba = a^2b^2$, prove that

$$bab^2a = (a^2b)^{2n}(bab^2a)b^{2n}.$$

2. (a) Explain how to find the inverse of the substitution

$$x_1' = f_1(x_1, x_2, \dots, x_n),$$

$$x_2' = f_2(x_1, x_2, \dots, x_n),$$

$$\dots\dots\dots$$

$$\dots\dots\dots$$

$$x_n' = f_n(x_1, x_2, \dots, x_n),$$

and illustrate your answer by actually finding the inverse of

$$(3x + 3y + 2z, x - y + z, 2x + 3y + z).$$

(b) Show that the inverse of a substitution with a matrix of the type

$$\begin{pmatrix} 0 & 0 & 0 & \alpha \\ 0 & 0 & \alpha & \beta \\ 0 & \alpha & \beta & \gamma \\ \alpha & \beta & \gamma & \delta \end{pmatrix} \quad \text{has a matrix of the type} \quad \begin{pmatrix} D & C & B & A \\ C & B & A & 0 \\ B & A & 0 & 0 \\ A & 0 & 0 & 0 \end{pmatrix}$$

(c) If the substitution ,

$$(a_{11}x_1 + a_{12}x_2 + \dots + a_{1n}x_n, a_{21}x_1 + a_{22}x_2 + \dots + a_{2n}x_n, \dots, a_{n1}x_1 + a_{n2}x_2 + \dots + a_{nn}x_n)$$

is orthogonal prove that

$$\begin{vmatrix} a_{11} & a_{12} & \dots & a_{1n} \\ a_{21} & a_{22} & \dots & a_{2n} \\ \dots & \dots & \dots & \dots \\ a_{n1} & a_{n2} & \dots & a_{nn} \end{vmatrix} = \pm 1.$$

(d) Show that the determinant of a unitary substitution has unit modulus.

3. (a) If a group G contains a subgroup H of index m , prove that G is isomorphic with a transitive permutation group of degree m .

(b) If H is a normal subgroup of G , so that

$$G = Hg_1 + Hg_2 + Hg_3 + \dots,$$

then the partitions Hg_1, Hg_2, Hg_3, \dots may be considered as the elements of a group which is completely defined when G and H are given.

4. (a) Show that the substitutions $(ax + by, cx + dy)$ and $(Ax + By, Cx + Dy)$ are permutable if $a - d : b : c = A - D : B : C$.

(b) If A is

$$(\cos \omega \cdot x - \sin \omega \cdot y, \sin \omega \cdot x + \cos \omega \cdot y),$$

show that

$$A^n \text{ is } (\cos n\omega \cdot x - \sin n\omega \cdot y, \sin n\omega \cdot x + \cos n\omega \cdot y).$$

What is the condition that A may be of finite order ?

(c) Prove that the n th power of

$$(ax_1 + x_2, ax_2 + x_3, \dots, ax_{m-1} + x_m, ax_m) \\ \left\{ (a + \epsilon)^n x_1, (a + \epsilon)^n x_2, \dots, a^n x_m \right\},$$

where ϵ is the operation changing

$$x_r \text{ into } x_{r+1} \text{ and } x_{m+1} = x_{m+2} = \dots = 0.$$

5. (a) Distinguish between a commutator and a commutant.

If $ab = ba^k$, show that the commutator of

$$b^r a^s \text{ and } b^t a^r \text{ is } a^s(k^s - 1) - r(k^r - 1).$$

(b) Prove that if any normal subgroup H of a group G coincides with or contains the commutant Δ of G , G/H is Abelian and conversely.

6. Prove that—

(a) Every subgroup H of order p^r in a group G of order p^a is contained normally in a subgroup of order p^{r+1} .

(b) The number of subgroups of order p^r in a group G of order $p^a \equiv 1 \pmod{p}$.

7. (a) Prove that the composition-factor groups of any two composition-series of a group G are identical except as regards the sequence in which they occur.

(b) What is a soluble group? Prove that every subgroup of a soluble group is soluble.

8. (a) Identify the group

$$a^h = b^{h-1} = 1, ab = ba^k, (k \text{ prime}),$$

and express it in the form of a permutation group.

(b) Prove that every Sylow subgroup of this group is cyclic.

9. (a) Prove that a transitive group of prime degree is primitive.

(b) Show that those permutations of an imprimitive group G which do not displace the imprimitive systems but only permutes the symbols of each system form a normal subgroup of G .

10. Define a Geometrical Movement and show that reflexion in a line is a geometrical movement.

Find the position of the image of the point (x, y) , when it is reflected in the line $lx + my = 0$.

Generalize the result obtained in the Euclidean space of n dimensions and hence or otherwise deduce that the substitution

$$x_i' = x_i - \frac{2ax_i}{a_1^2 + a_2^2 + \dots + a_m^2} (a_1 x_1 + a_2 x_2 + \dots + a_m x_m)$$

is of order 2.

Show that the translations of a group G of geometrical movements form a normal subgroup H , and G/H is simply isomorphic with a point-group.

(Theory of Groups—Second Paper.)**EIGHTH PAPER**

Examiners— $\left\{ \begin{array}{l} \text{MR. M. GHOSH, M.Sc.} \\ \text{DR. S. D. MUKHERJEE, M.A., Ph.D.} \end{array} \right.$

The questions are of equal value.

Candidates are required to answer SIX questions, two of which must be the THIRD and the FIFTH.

1. (a) If

$$\Delta \equiv \begin{vmatrix} 1 & x_1 & x_1^2 & \dots & x_1^{n-1} \\ 1 & x_2 & x_2^2 & \dots & x_2^{n-1} \\ \dots & \dots & \dots & \dots & \dots \\ 1 & x_n & x_n^2 & \dots & x_n^{n-1} \end{vmatrix} \quad \text{and } s \text{ denotes a transposition}$$

prove that (s) $\Delta = -\Delta$.

Hence show that the totality of even substitutions on n letters form a group. What is this group called?

(b) Prove that the order of the alternating group on n letters is $\frac{1}{2}n!$.

(c) If ω is a primitive μ the root of unity, show that

$$(x_1 + \omega x_2 + \omega^2 x_3 + \dots + \omega^{\mu-1} x_\mu)^\mu$$

belongs to the cyclic group

$$\{1, a, \dots, a, \dots, a^{\mu-1}\} \text{ where } a \equiv (x_1 x_2 \dots x_\mu).$$

2 (a) If a rational function $\psi(x_1, x_2, \dots, x_n)$ belongs to a subgroup H of index ν under G , show that ψ is ν -valued under G . Illustrate your answer by considering the function

$$x_1 x_2 + x_3 x_4$$

and its conjugate values.

(b) If two rational functions belong to the same group show that either is a rational function of the other and the elementary symmetric functions of the arguments. Verify the above proposition by expressing $(x_1 - x_2)(x_2 - x_3)(x_3 - x_1)$ in terms of $(x_1 + \omega x_2 + \omega^2 x_3)^2$ where x_1, x_2, x_3 are the roots of

$$x^3 - c_1 x^2 + c_2 x - c_3 = 0.$$

3. (a) Discuss Cardan's solution of the cubic equation from the standpoint of the Group-Theory and develop a similar scheme for solving the general equation of the n th degree.

(b) Explain the term Domain of Rationality. What is meant by saying that an integral rational function is reducible in a domain R ? What is the domain in which $x^4 + 1$ is reducible?

Prove that a root of an irreducible equation in a domain R does not satisfy an equation of lower degree in R .

4. Prove fully that—

(a) A cyclotomic equation for the p th roots of unity, p being prime is irreducible in the domain of all rational numbers and hence it is an Abelian equation in that domain.

(b) A binomial equation of prime degree can be solved by means of a chain of Abelian equations of prime degree.

5. (a) Define the term Adjunction and show that by the adjunction of a rational function $\psi(x_1, x_2, \dots, x_n)$ belonging to a subgroup H of G , the group G of the equation is reduced precisely to the subgroup H .

(b) In the domain of rational numbers find the group of the equation

(a) $(x-1)(x-2)(x-3)=0$.

(b) $x^4 + 1 = 0$

(c) $x^3 + 3x^2 - 6x + 1 = 0$.

6. (a) Define a metacyclic group and prove that the group of a Galoisian equation of prime degree p is a subgroup of the metacyclic group of degree p .

(b) Show that every cyclic equation of the third degree can be reduced to the form

$$y^3 - 3(m^2 + m + 1)y + (m^3 + m + 1)(2m + 1) = 0.$$

7. Criticize the following statement:—

A proposed construction by ruler and compasses is possible if and only if the numbers which define analytically the desired geometrical elements can be derived from those defining the given elements by rational operations and extraction of real square roots performed a finite number of times.

Hence show that the trisection of any angle or the duplication of a cube cannot be effected by ruler and compasses alone.

8. Show that a regular polygon of n sides can be constructed by ruler and compasses if and only if $n = 2^k p_1 p_2 \dots$, where p_1, p_2, \dots are distinct primes of the form $2^{2^i} + 1$.

9. Write a short note on the historical development of the Theory of Equations of the Fifth degree.

10. Prove that an irreducible solvable quintic with real coefficients cannot have three real roots and two complex roots.

(Finite Differences—First Paper)**SEVENTH PAPER**

Examiners— $\left\{ \begin{array}{l} \text{MR. P. L. GANGULI, M.A., B.L.} \\ \text{PROF. J. A. STRANG, M.A., B.Sc} \end{array} \right.$

The questions are of equal value.

Not more than SIX questions to be attempted.

1. Show that the n^{th} difference of a rational and integral function of x of the n^{th} degree is constant.

Prove

$$\Delta^n x^m = (x+n)^m - n(x+n-1)^m + \frac{n(n-1)}{2!} (x+n-2)^m \dots$$

Show that

$$Ta \Delta^n n^a = \int_0^\infty e^{-nx} (e^{-x}-1)^m x^{a-1} dx.$$

2. Prove Herschel's theorem.

$$\phi(e^t) = \phi(1) + \phi(E)0.t + \phi(E)0^2 \cdot \frac{t^2}{2!} + \dots$$

Hence deduce

$$f(\Delta)0^{n+1} = (n+1) \frac{f(\Delta)}{\log(1+\Delta)} 0^n.$$

Prove

$$\Delta^m 0^n = m(\Delta^{m-1} 0^{n-1} + \Delta^m 0^{n-1}).$$

3. Sum the series

$$\frac{1^2 \cdot x}{2 \cdot 3} + \frac{2^2 \cdot x^2}{3 \cdot 4} + \frac{3^2 \cdot x^3}{4 \cdot 5} + \dots \text{to } n \text{ terms.}$$

$$\text{Calculate } \sum \tan^{-1} \frac{1}{1+x+x^2}.$$

4. Show that approximately

$$1.2.3 \dots x = \sqrt{2\pi x} \left(\frac{x}{e}\right),$$

when x is large but not infinite.

Find an approximate value of

$$\frac{3.5 \dots (2x+1)}{2.4 \dots 2x} \text{ for large values of } x.$$

5. Prove the Gregory-Newton formula of interpolation.
Given the table of values

x	-3	-2	-1	0	1
y	16	7	4	1-8	

find by means of the Gregory-Newton formula an expression for y as a function of x .

p, q, r, s , are successive entries in a table corresponding to equidistant arguments, show that when third differences are taken into account the entry corresponding to the argument half-way between the arguments of q and r is

$$\frac{q+r}{2} + \frac{(q+r)-(p+s)}{16}.$$

6. Define the divided difference $[x_0 x_1 x_2 \dots x_n]$ of the function $f(x)$, and prove that

$$[x_0 x_1 x_2 \dots x_n] = \frac{\begin{vmatrix} 1 & x_0 & x_0^2 & \dots & x_0^{n-1} & f(x_0) \\ 1 & x_1 & x_1^2 & \dots & x_1^{n-1} & f(x_1) \\ \dots & \dots & \dots & \dots & \dots & \dots \\ 1 & x_n & x_n^2 & \dots & x_n^{n-1} & f(x_n) \end{vmatrix}}{\begin{vmatrix} 1 & x_0 & x_0^2 & \dots & x_0^{n-1} \\ 1 & x_1 & x_1^2 & \dots & x_1^{n-1} \\ \dots & \dots & \dots & \dots & \dots \\ 1 & x_n & x_n^2 & \dots & x_n^{n-1} \end{vmatrix}}.$$

Show that the divided difference of

$$x^{n+1} \text{ is } x_0 + x_1 + \dots + x_n.$$

Obtain a suitable expression for $[x_1 x_2 \dots x_n]$.

7. Prove the relations

$$\begin{aligned} u_{n+m} &= u_n + m \Delta u_{n-1} + \frac{m(m-1)}{2!} \Delta^2 u_{n-2} \\ &\quad + \frac{m(m-1)(m-2)}{3!} \Delta^3 u_{n-3} + \dots \\ \Delta^n u_m &= \Delta^n u_{m-n} + n \Delta^{n+1} u_{m-n-1} + \frac{n(n+1)}{2!} \Delta^{n+2} u_{m-n-2} + \dots \end{aligned}$$

Investigate the convergence of the first series when

$$u_n = \frac{1}{n(n+1) \dots (n+k)}, \text{ where } k \text{ is an integer.}$$

Prove that

$$\begin{aligned} \frac{1}{n+1} &= \frac{1}{n} - \frac{1}{(n-1)(n-2)} + \frac{2!}{(n-2)(n-3)(n-4)} \\ &\quad - \frac{3!}{(n-3)(n-4)(n-5)(n-6)} + \dots \end{aligned}$$

8. The following table furnishes, at noon on the given dates, the value of $\log D$, where D is the distance of Venus from the earth measured in radii of the earth's orbit:—

<i>Date.</i>	<i>log D.</i>
July 1, 1912	·2393732
2	·2394118
3	·2394358
5	·2394402
6	·2394204
7	·2393860

Determine as accurately as you can from the given data

- (i) the value of $\log D$ at noon on July 4 ;
 (ii) the time at which $\log D$ was greatest, and the corresponding value of $\log D$.

9. The following table, giving the values of the moon's longitude at equal intervals of time, contains an error in one, and only one, entry:—

	339°	36'	53''·6
	345	32	44·3
	351	30	30·9
	357	30	41·8
(360° +)	3	34	27·5
	9	41	58·6
	15	54	6·4
	22	11	30·5

Utilise the theory of finite differences to detect the position of the error and correct it.

10. Write a short essay on the Euler-Maclaurin summation formula, referring particularly to the nature of its convergence.

Prove that if

$$u = n^n(n+1)^{n-1}(n+2)^{n-2} \dots (2n)$$

and
$$v = n^{\frac{n(n+1)}{2}} \cdot 2^{2n^2} \cdot e^{-\frac{5n^2}{4}}$$

then
$$L \cdot \frac{u}{v} \text{ is finite.}$$

$$n \rightarrow \infty$$

(Finite Differences—Second Paper.)**EIGHTH PAPER**

Examiners— $\left\{ \begin{array}{l} \text{DR. S. M. GANGULI, D.Sc.} \\ \text{PROF. G. PRASAD, D. Sc.} \end{array} \right.$

The questions are of equal value.

Full marks for ANY SIX questions.

1. Solve any three of the following equations:—

(a) $y_{x+2} - 5y_{x+1} + 6y_x = a^x.$

(b) $y_{x+2} - n^2 y_x = \sin mx.$

(c) $y_{x+3} + 2y_{x+2} + 2y_{x+1} + y_x = \frac{3}{x(x+3)} + \frac{3}{(x-1)(x+2)}$

(d) $u_{x+1} - u_{x-1} = \frac{1}{x} u_x.$

2. Give any method for solving the general linear non-homogeneous difference-equation with constant coefficients.

Hence solve completely

$$u_{x+3} - 7u_{x+2} + 16u_{x+1} - 12u_x = x.2^x.$$

3. Solve the equations:—

$$\left. \begin{array}{l} (a) \ U_{x+1} + 2V_{x+1} - U_x = 0, \\ \quad V_{x+1} - 2U_x - V_x = a^x. \end{array} \right\}$$

(b) $\Delta_x^2 u_{x-1}, y = \Delta_y^2 u_{x,y-1}.$

4. Solve the functional equations:—

(a) $\frac{\psi(x)}{\sqrt{\psi(1-x)}} + \frac{\psi(1-x)}{\sqrt{\psi(x)}} = 1.$

(b) $\{\phi(x)\}^2 + \left\{ \phi\left(\frac{\pi}{2} - x\right) \right\}^2 = 1.$

5.

Either,

Determine the class of curves in which the square of any normal exceeds the square of the ordinate erected at its foot by a constant quantity A .

Or,

Find the number of grains at the end of the x th year in the following circumstances: A seed is planted—when one year old it produces ten-fold, and when two years old and upwards eighteen-fold; every seed is planted as soon as produced.

6. State Poincaré's theorem for a homogeneous linear difference-equation of the n th order, and prove the theorem fully when $n=2$.

7. Solve completely any one of the following equations, giving a particular solution holomorphic in the complex variable z :—

(i) $u_{s+1} - su_s = -e^{-1}$.

(ii) $u_{s+1} + ku_s = I(s)$, k , being a positive constant.

8. Indicate briefly how the general linear homogeneous difference-equation of the n th order, whose coefficients are linear functions of the variable z (treated as a complex quantity), can be solved.

Solve completely

$$(z+3)y_{s+2} - (4z+7)y_{s+1} + (3z+1)y_s = 0.$$

9. Define Arithmetic average, median, mode, and quartile and prove that the mean deviation is a minimum when measured from the median.

The following are the annual premiums required to secure at death Rs. 1,000 plus a guaranteed reversionary bonus of Rs. 2 per cent. on the sum assured under the Whole Life Policies of a certain Assurance Company:—

Age next birth day.	Annual Premium.
	Rs As. P.
25	24 12 6
30	27 14 2
5	31 11 8
40	36 7 6
45	42 6 6

Calculate by any method of interpolation what the premium would be at age 38 next birthday.

10. Derive the equation of the normal curve of error as the limit of the binomial series $(p+q)^n$.

11. Show that the coefficient of correlation can be expressed in the form

$$\frac{1}{\sigma_1 \sigma_2} \left\{ \frac{1}{n} S(xy) - \bar{x}\bar{y} \right\},$$

where \bar{x} , \bar{y} are the averages of the observations referred to any origin.

Find the correlation between the following values of X and Y correct to 2 decimal places:—

X	6	5	8	10	9
Y	4	7	10	6	9

**(Theory of Functions of a Complex Variable—
First Paper.)**

SEVENTH PAPER

Examiners— $\begin{cases} \text{PROF. G. PRASAD, M.A., D.Sc.} \\ \text{MR. D. N. SEN, M.A.} \end{cases}$

The questions are of equal value.

[Full marks for ANY SIX questions.]

1. (a) Prove that, (if the points z_1, z_2, z_3 are the vertices of an equilateral triangle,

$$z_1^2 + z_2^2 + z_3^2 = z_2 z_3 + z_3 z_1 + z_1 z_2.$$

(b) Explain how you can find the number of roots of an equation $f(z)=0$, which are contained in various regions of the z -plane.

If a and b are real, shew that the equation $z^{4p-1} + az + b = 0$ has $2p$ or $2p-1$ roots to the right of the y -axis, according as b is positive or negative.

2. Define Mercator's projection and stereographic projection, as applied to a sphere. Shew that each gives a conformal representation and that loxodromes on the sphere become straight lines and equiangular spirals in the two cases respectively. Find out the analytic function which enables you to pass from Mercator's projection to stereographic projection.

3. If $\lim_{z \rightarrow a} (z-a)f(z) = k$, where k is a constant, shew that

$$\lim_{r \rightarrow 0} \int f(z) dz,$$

taken round the arc $\theta_1 \leq \arg z \leq \theta_2$ of circle $|z-a| = r$, is $i(\theta_2 - \theta_1)k$.

Prove that

$$\int_0^\infty \frac{\sin x}{x} dx = \frac{\pi}{2}.$$

Also shew that

$$\int_0^\infty \frac{\sin x}{\sqrt{x}} dx = \sqrt{\frac{\pi}{2}}$$

4. (a) Prove that $f(z) = \sum a_n z^n$ has at least one singular point on its circle of convergence.

(b) What do you mean by the *natural boundary* of a function? Shew that the unit circle is the natural boundary of the function

$$f(z) = \sum b^n z^{a^n}$$

where a is a positive integer > 1 and $|b| < 1$.

5. Give a proof of the fundamental theorem of Algebra.

Shew that of the two functions $4z \pm \tan z$ each possesses only one zero within the unit circle, stating carefully any theorem on which your results are based.

6. Discuss the various ways in which Cauchy's theorem can be proved. Reproduce carefully the second proof of Goursat and outline a proof based on the Cauchy-Reimann partial differential equations.

7. State (without proof) the following theorems:—

- (i) Weierstrass's factor theorem.
- (ii) Mittag-Leffler's theorem.

Prove that

$$\cot z = \frac{1}{z} + \sum' \left(\frac{1}{z - n\pi} + \frac{1}{n\pi} \right)$$

and that

$$\frac{1}{\Gamma(z)} = e^{\gamma z} \cdot z \cdot \prod_1^{\infty} \left\{ \left(1 + \frac{z}{n} \right) e^{-\frac{z}{n}} \right\}$$

In the above γ is Euler's constant and Σ' indicates summation with respect to all the values of n excepting zero.

8. Classify the singular points of a uniform function of a complex variable as regards their nature, their mode of distribution, and the values assumed by the function at the points and in their neighbourhood.

State (without proof) that the theorems of Weierstrass and Picard about a function having an essential singularity and illustrate the theorems by examples.

9. Prove carefully the theorem of Taylor for a function of a complex variable.

Deduce that

$$\begin{aligned} |\cos z| &< \cosh |z|, \\ |\sin z| &< \sinh |z|. \end{aligned}$$

10. If a uniform function has only a finite number of singularities, prove that the sum of the residues at these singularities, including that at infinity, is zero.

Deduce Liouville's theorem: A function which is holomorphic at all points of the plane, including infinity, must be a constant.

11. State and prove Morera's theorem; give any generalization in which the continuity of $f(z)$ is not assumed.

**(Theory of Functions of a Complex Variable—
Second Paper.)**

EIGHTH PAPER.

Examiners— $\left\{ \begin{array}{l} \text{MR. H. P. BANERJI, M. SC.} \\ \text{PROF. J. R. STRANG, M.A., B.Sc.} \end{array} \right.$

The questions are of equal value.

Answer ANY SIX questions.

1. Explain the method of reduction of an elliptic integral to standard form. Prove that

$$\int_0^1 \frac{dx}{\sqrt{1-x^4}} = \frac{1}{\sqrt{2}} F\left(\frac{1}{\sqrt{2}}, \frac{\pi}{2}\right) = \left(\frac{8}{\pi}\right)^{\frac{1}{2}} F^2\left(\frac{5}{4}\right).$$

2. Prove that

$$(i) \quad \wp(2u) - \wp(2v) = - \frac{\wp'(u+v)\wp'(u-v)}{\{\wp(u+v) - \wp(u-v)\}^2}.$$

$$(ii) \quad (cn u - cn v)[1 + cn(u+v)] + (sn u \, dn v - sn v \, dn u) \cdot sn(u+v) = 0.$$

3. Every elliptic function can be expressed as a product of powers of suitably chosen σ functions. Prove this.

Prove that

$$\zeta(u+v) + \zeta(u-v) - 2\zeta(u)$$

is an elliptic function of u , and obtain an expression for it in terms of σ functions.

4. Show that the birational transformation

$$x = \frac{1-\xi\eta}{1+\eta^2}, \quad y = \frac{\xi+\eta}{1+\eta^2}$$

reduces the sextic curve

$$\xi\eta^3(\xi^2 + \eta^2) - 2\xi^2\eta^2 + (\xi + \eta)(\xi + 3\eta) = 0$$

to a non-unicausal cubic, and hence express ξ and η as rational functions of $\wp(u)$ and $\wp'(u)$, where $g_3 = 4$, $g_2 = 0$

5. Find the most general value of

$$\int_0^z \frac{dz}{\sqrt{(1+z^2)(1-k^2 z^2)}}$$

the initial value of the integrand at $z=0$ being unity. What would this value be, when the upper limit is infinite?

6. Prove Jacobi's theorem that a single-valued analytic function of one variable cannot have three independent periods. Deduce that such a function cannot have two independent periods whose ratio is real.

7. Prove that

$$\vartheta_2^4 + \vartheta_4^4 = \vartheta_3^4.$$

Hence or otherwise show that

$$\left\{ \prod_1^{\infty} (1 - q^{2n-1}) \right\}^8 + 16q \left\{ \prod_1^{\infty} (1 + q^{2n}) \right\}^8 = \left\{ \prod_1^{\infty} (1 + q^{2n-1}) \right\}^8.$$

8. Express $(\sigma)z$ in terms of the theta function.

Hence show that

$$\eta_2 = - \left(\frac{\pi^3 w_2}{12w_1^3} \frac{\partial_1'''}{\partial_1'} + \frac{\pi i}{2w_1} \right)$$

9. State and prove Abel's theorem for integrals of the first kind.

Deduce the addition theorem for $\wp(z)$.

10. Define an algebraic function and explain the use of Riemann surfaces in the study of the properties of such functions.

Find the Riemann surface for the function

$$w = \sqrt{z} + \frac{1}{\sqrt{z-1}}.$$

(Vector Analysis and Quaternions—First Paper)

SEVENTH PAPER

Examiners— $\left\{ \begin{array}{l} \text{DR. H. D. BAGCHI, M.A., PH.D.} \\ \text{MR. M. N. ROY, M.A., B.L.} \end{array} \right.$

The questions are of equal value.

Answer THREE questions from EACH half.

First Half

1. (a) Give the relation

$$V\alpha\beta = c\alpha,$$

where α, β are certain real (non-zero) vectors and c is a real scalar, prove that

$$\left. \begin{array}{l} \alpha // \beta \\ \text{and } c = 0 \end{array} \right\}$$

(b) If a *variable* vector ρ , (drawn from a fixed origin) be always subject to the condition :

$$\mu - \nabla \rho \lambda / |\lambda|,$$

(where λ and μ are *fixed* vectors), prove that the extremity of ρ traces out a right line $\parallel \lambda$.

2. Establish the formula

$$\rho S \alpha \beta \gamma = \alpha S \beta \gamma \rho + \beta S \gamma \alpha \rho + \gamma S \alpha \beta \rho,$$

and hence or otherwise find the three scalar equations equivalent to the vector equation

$$\rho = \alpha u^2 + \beta uv + \gamma v^2,$$

(u, v being scalars).

Eliminate u, v , and derive the resultant in the form :

$$S \beta \gamma \rho S \alpha \beta \rho = (S \gamma \alpha \rho)^2.$$

Also characterize this surface geometrically.

3. (a) Prove that, in order that the scalar expression

$$S \rho \phi \rho$$

(involving the self-conjugate function $\phi \rho$) may be the product of two linear factors of the form :

$$2S \lambda \rho S \mu \rho,$$

the necessary and sufficient condition is that the third invariant m of ϕ be zero.

(b) $\phi \rho$ being an *unrestricted* self-conjugate function, show how to choose the scalar c such that the quantity

$$S \cdot \rho(\phi + c)\rho$$

may break up into a pair of linear factors ; and hence derive Hamilton's cyclic form :

$$S \rho \phi \rho = g \rho^3 + 2S \lambda \rho S \mu \rho.$$

4. (a) A surface being given in the scalar form :

$$f(\rho) = 0,$$

obtain the differential equations of geodesaics and of asymptotic lines in the respective forms :

$$S \cdot v d\rho \, d^2 \rho = 0,$$

$$S \cdot v d^2 \rho = 0,$$

where v , the vector-normal, is $\equiv \Delta \cdot f(\rho)$.

(b) For the plane surface $S \lambda \rho = \text{const.}$, calculate the vector-function v , and verify that the differential equation of the asymptotic lines reduces to an *identity*. Interpret this result geometrically.

5. (a) If α, β, γ be unit vectors, located along the tangent, principal normal and binormal at an arbitrary point on the curve

$$\rho = \phi(s),$$

and r, r' be the (scalar) radii of curvature and of torsion, prove the vector relations :

$$\frac{d\alpha}{ds} = \frac{\beta}{r} \text{ and } \frac{d\gamma}{ds} = -\frac{\beta}{r'}.$$

(b) Deduce immediately the following well-known formulæ of Differential Geometry:—

$$\left. \begin{aligned} \frac{da}{ds} &= \frac{b}{r}, \\ \frac{da'}{ds} &= \frac{b'}{r'}, \\ \frac{da''}{ds} &= \frac{b''}{r''} \end{aligned} \right\} \text{ and } \left\{ \begin{aligned} \frac{dc}{ds} &= -\frac{b}{r}, \\ \frac{dc'}{ds} &= -\frac{b'}{r'}, \\ \frac{dc''}{ds} &= -\frac{b''}{r''} \end{aligned} \right.$$

where (a, a', a'') , (b, b', b'') , and (c, c', c'') are the sets of direction-cosines of the three principal lines at a point on the curve, whose arcual parameter is s .

Second Half.

1. If $\alpha' = UV\beta\alpha, \beta' = UV\gamma\alpha, \gamma' = UV\alpha\beta,$

where $T\alpha = T\beta = T\gamma = 1$

and $S\alpha\beta\gamma < 0$, and if A, B, C are the supplements of the angles between $(\beta', \gamma') : (\gamma', \alpha') ; (\alpha', \beta')$, show that

$$\frac{2A}{\alpha''} \frac{2B}{\beta''} \frac{2C}{\gamma''} = -1.$$

Show further that this relation can be transformed into

$$e^{A\alpha} \cdot e^{B\beta} \cdot e^{C\gamma} = -1.$$

Can it also be put in the form

$$e^{A\alpha} + B\beta + C\gamma = -1 ?$$

State your reason.

2. Interpret geometrically the following equations:—

(i) $TVU(\rho\alpha) = TVU(\beta\alpha).$

(ii) $T(\omega + \rho) = 1.$

(iii) $\left(U \frac{\rho}{\alpha} \right)^2 = 1.$

iv) $\left(\frac{\omega + \rho - \alpha}{\beta} \right)^2 = -1.$

3. Find the condition that the two straight lines $\rho = \gamma + at$ and $\rho = \gamma' + a'l'$ may intersect.

Prove that the locus of a straight line which intersects the three straight lines $\rho = \gamma_1 + a_1 t_1$, $\rho = \gamma_2 + a_2 t_2$, and $\rho = \gamma_3 + a_3 t_3$ is given by the equation.

$$S. V(\rho - \gamma_1) a_1 V(\rho - \gamma_2) a_2 V(\rho - \gamma_3) a_3 = 0.$$

Reduce this equation to show that it represents a quadric surface, and discuss the character of this quadric surface.

4. Show that the family of confocals

$$S\rho(\phi + u)^{-1}\rho + 1 = 0$$

is an equipotential system, and determine the potential.

5. A particle is acted on by a force ξ which is always directed to the origin. Write down the equation of motion and deduce the first integrals

$$\frac{1}{2}mT\rho^2 + \int S\xi d\rho = E$$

and

$$mV\rho\dot{\rho} = \beta.$$

A particle describes the equiangular spiral $\rho = a''\beta$ under the action of a force tending to the origin. Find the law of force and show that a hodograph is also an equiangular spiral having the same pole.

(Vector Analysis and Quaternions—Second Paper)

EIGHTH PAPER

Examiners— $\left\{ \begin{array}{l} \text{MR. S. C. GHOSH, M.A.} \\ \text{MR. D. P. BHATTACHARYYA, M.A.} \end{array} \right.$

The questions are of equal value.

Answer ANY SIX questions.

1. Define the *spin vector* of a linear vector function and show that, in terms of the roots and axes of the function, the spin vector is given by

$$2eSr_1r_2r_3 = (g_2 - g_3)r_1Sr_2r_3 + (g_3 - g_1)r_2Sr_3r_1 + (g_1 - g_2)r_3Sr_1r_2.$$

Hence, or otherwise, prove that

(a) If the axes of a function are mutually rectangular, the function is self-conjugate; and

(b) If only two of the axes are at right angles, the spin vector lies in their plane.

2. Give a definition of the operator ∇ which immediately leads, under certain limitations, to the integration theorem

$$\int dv \cdot q = \int \nabla q \cdot dv.$$

Establish this theorem, indicating the limitations under which the result holds.

At each point of a closed surface, a force of constant magnitude acts outwards along the normal. Show that the resultant of these forces and their total moment about the origin are both zero.

3. Prove that the equation

$$\rho = (\phi + t)^{-1} a,$$

where a is a constant vector and t a variable scalar, represents a twisted cubic.

Prove also that the tangent line and the osculating plane of the cubic at a point ' t ' may be expressed by

$$\widehat{\omega} = (\phi + x)(\phi + t)^{-2} a,$$

and

$$\widetilde{\omega} = (\phi + x)(\phi + y)(\phi + t)^{-3} a.$$

4. If ρ is expressed in terms of three parameters u , v , and w , such that the families of surfaces u , v , w are mutually orthogonal, show that

$$\nabla^2 = -\frac{1}{T \cdot \rho_1 \rho_2 \rho_3} \sum \frac{\partial}{\partial u} \left(T \cdot \frac{\rho_2 \rho_3}{\rho_1} \cdot \frac{\partial}{\partial u} \right),$$

where

$$\rho_1 = \frac{\partial \rho}{\partial u}, \quad \rho_2 = \frac{\partial \rho}{\partial v}, \quad \text{and} \quad \rho_3 = \frac{\partial \rho}{\partial w}.$$

Determine an expression for ∇^2 where

$$\rho = u[i \cos w + j \sin w] \sin v + k \cos v.$$

5. A particle of unit mass moves under the action of a force ξ . Show that in every position P of the particle, the force lies in the osculating plane of the orbit at P .

Show also that the vector curvature of the orbit is given by

$$\frac{1}{T \cdot \rho} \nabla \frac{\xi}{\rho}.$$

6. (a) Defining ∇ as the operator which derives the force from the potential obtain for it the usual canonical form.

(b) Show that $\nabla^2 u = 0$ at a point P at which u is the potential, P being wholly outside the attracting matter.

7. Define 'Homogeneous Strain'.

Show that conjugate strains produce equal changes of volume.

Show that homogeneous strain converts an originally spherical portion of a body into an ellipsoid.

8. (a) Show that the conjugate to any strain consists of the reversed rotation followed by the Pure Strain.

(b) Find the condition that a given strain is rotational only.

9. Find the condition that the family of surfaces $f(\rho, u) = 0$ should form an equipotential system, and determine the potential when the condition is satisfied.

10. Write a short essay on *one* of the following:—

(i) The operator ∇ .

(ii) The identification of vector and quadrantal versor.

(iii) 'Multiplication is not necessarily addition but an operation self-contained and self-interpretable.'

(Theory of Numbers—First Paper)

SEVENTH PAPER

Examiners— $\left\{ \begin{array}{l} \text{MR. M. GUPTA, M.Sc.} \\ \text{PROF. J. A. STRANG, M.A. B.Sc.} \end{array} \right.$

The questions are of equal value.

About SIX questions carry full marks.

1. (a) Show that $2^{4n+2} + 7^{2n+1}$ is or is not divisible by 13 according as n is even or odd.

(b) If N is the sum of the p^{th} powers of ten consecutive integers show that N must terminate in 3 or 5 according as the positive integer p is or is not a multiple of 4.

2. State and prove Euler's generalization of Fermat's theorem.

If p is the product of the distinct prime factors common to m and n , each prime factor being taken once only, show that

$$\phi(mn) = \frac{p\phi(m)\phi(n)}{\phi(p)}.$$

Generalize.

3. Prove that in addition to the trivial solution $x=1$ there are just three numbers less than 1000 which possess the property that the sum of the number and its square leaves a remainder 2 when divided by 1000. Find these numbers.

4. Show that if D_0^{2n} denotes the operation of differentiating $2n$ times with respect to x and then replacing x by zero

$$\begin{aligned} D_0^{2n}(1-e^x)^{p-1} &\equiv 0 \pmod{p} \text{ if } p \text{ is a composite number} \\ &\equiv -1 \text{ or } 0 \pmod{p} \text{ when } p \text{ is prime,} \end{aligned}$$

according as $2n$ is or is not divisible by $p-1$.

5. Write a short note on the properties and use of the symbol $\left(\frac{a}{b}\right)$

Prove that

$$(i) \quad \left(\frac{2}{p}\right) = (-1)^{\frac{p^2-1}{8}}$$

$$(ii) \quad P \equiv \left(\frac{-1}{P} \right) + 2 \left\{ 1 - \left(\frac{2}{P} \right) \right\} \pmod{8},$$

P being an odd positive integer in both (i) and (ii).

6. If

$$D = \pm P \equiv 1 \pmod{4},$$

where P is a positive integer which does not contain a square factor, show that all positive integers which satisfy

$$\left(\frac{D}{x} \right) = +1$$

are given by

$$x \equiv K + \frac{1 + (-1)^k}{2} P \pmod{2P},$$

where K is any of the $\frac{1}{2}\phi(P)$ positive integers less than and prime to P ,

$$\text{and} \quad \left(\frac{K}{P} \right) = +1.$$

Work out the case $D = -19$

7. How do Lucas and Schemmel generalize Euler's ϕ function? Shew that Lucas's ψ function includes Schemmel's.

Obtain the value of $\psi(p^\pi)$, where p is a prime and π any positive integer.

Show that

$$\sum_{r=1}^{\infty} \left[\frac{n}{r} \right] \phi(r) = \frac{n^2 + n}{2},$$

where $[x]$ denotes the greatest integer in the positive number x , and n a given positive integer.

8. Show that the congruent $ax \equiv b \pmod{m}$ possesses δ incongruent roots \pmod{m} , where δ denotes the greatest common divisor of a and m and $b \equiv 0 \pmod{\delta}$.

Solve the congruences

$$(i) \quad 5478x \equiv 18 \pmod{17767}.$$

$$(ii) \quad 19x^{10} \equiv 37 \pmod{79},$$

given that $\text{ind } 19 \equiv 62$, $\text{ind } 34 \equiv 29$, $\text{ind } 37 \equiv 64$, and $\text{ind } 39 \equiv 65 \pmod{72}$.

9. Prove that if an integer a appertains to the exponent $d \pmod{p}$, where p is an odd prime, and if g is a primitive root of p , then the greatest common divisor of $\text{ind } ga$ and $p-1$ is

$$\frac{p-1}{d}.$$

Prove the following:—

$$(i) \quad \text{ind } (-1) \equiv \frac{p-1}{2} \pmod{p-1}, \quad p = \text{an odd prime};$$

$$(ii) \pi \equiv 1 \pmod{p},$$

where π denotes the product of all the incongruent primitive roots of an odd prime $p \neq 3$.

10. Define a Mersenne number and a perfect number, and show that the latter ends in either 6 or 8. How many perfect numbers have been discovered up till now?

Prove that every perfect number is of Euclid's type.

(Theory of Numbers—Second Paper)

EIGHTH PAPER

Examiners— $\left\{ \begin{array}{l} \text{MR. M. GUPTA, M.Sc.} \\ \text{MR. H. P. BANERJI, M.Sc.} \end{array} \right.$

The questions are of equal value.

Answer SIX questions only.

1. When is a binary quadratic form said to be (i) *pro-primitive*, (ii) *impro-primitive* and when is it said to be of divisor σ ?

Show that a form of divisor 2 is or is not improprimitve according as its determinant D is odd or even and prove also that in the former case $D \equiv 1 \pmod{4}$.

Examine whether or no the determinant $D=45$ possesses a class of divisor 6.

2. If $(t_1, u_1), (t_2, u_2)$ denote two integral solutions of the equation

$$t^2 - Du^2 = \sigma^2$$

corresponding to an indefinite form of divisor σ and determinant D , shew that

$$\left(t = \frac{t_1 t_2 + Du_1 u_2}{\sigma}, u = \frac{t_1 u_2 - t_2 u_1}{\sigma} \right)$$

is also an integral solution of the same equation.

Shew how you can deduce all solutions of the same equation from its *fundamental solution*.

The equation

$$t^2 - 19u^2 = 9$$

possesses the integral solutions (22, 5), (35, 8). Can you get an integral solution of the same equation from them by the above method? If not, why not?

3. Shew that the number of *reduced* forms for a given negative determinant is finite.

Obtain all the *non-equivalent* reduced forms for the determinant $D = -63$ and thence determine the number of *classes* of the different divisors for $D = -63$.

4. Shew that a given form of positive determinant is properly equivalent to a reduced form of the same determinant.

Examine for equivalence the forms (18, 29, 47), (58, 45, 35) and determine the substitution which transforms one into the other.

5. Explain what you mean by the *period* of a reduced form of positive determinant. Prove that the number of reduced forms in a period is even.

State when the two indefinite reduced forms (a, b, c) , $(-a, b, -c)$ belong to the same period. Justify your statement by an illustration.

6. What do you understand by the *quadratic* and *supplementary* characters of the determinant of a binary quadratic form? Classify determinants in accordance with the supplementary characters they possess. What is the total number of *possible* and *actual* genera for a given determinant?

Explain how you can *a priori* ascertain the existence of a given *genus* for a particular determinant.

7. Compound the forms (2, 6, 3) and (3, 3, -7) and determine the *bilinear* substitution which resolves the compound into the product of the given forms.

If two binary quadratic forms have as their divisors σ and σ' which are relatively prime to each other, shew that $\sigma\sigma'$ is the divisor of their compound.

8. Shew how from three classes whose divisors are relatively prime to one another, you can choose three forms one from each class so that they may be *concordant* in pairs.

If two concordant forms are respectively equivalent to two others, shew that the compound of the first pair is equivalent to that of the second.

9. Shew that the equation whose roots are the Gauss' *periods* of the roots of the *cyclotomic equation* is *irreducible*.

Calculate the two 5-nomial periods for $p = 11$ and thence or otherwise obtain the quadratic equation of periods for $p = 11$.

10. Prove that there exist two polynomials Y and Z in x with rational integral coefficients so as to make

$$4. \frac{x^p - 1}{x - 1} = Y^2 - \left(\frac{-1}{p} \right) p Z^2,$$

where p is an odd prime. How do you modify the above identity when p is replaced by any odd positive integer which does not contain a square factor?

Calculate Y and Z for $p = 11$.

(Non-Euclidean Geometry—First Paper.)**SEVENTH PAPER.**

Examiners:— $\left\{ \begin{array}{l} \text{MR. M. GHOSH, M.Sc.} \\ \text{DR. R. N. SEN, M.A., Ph.D.} \end{array} \right.$

The questions are of equal value.

Only SIX questions are to be attempted.

1. State Hilbert's five groups of axioms for Euclidean Plane Geometry. What modification would be required to make the axioms a suitable basis for Plane Hyperbolic Geometry?

What is meant by saying that the groups of axioms are *compatible* and *independent*?

2. Shew that the following assumptions are equivalent to Euclid's parallel postulate:—

(i) Through any three non-collinear points we can always pass a circle of finite radius.

(ii) Through any arbitrary point in the interior of an angle we can always draw a line meeting both the arms of the angle.

3. Prove after Legendre that the sum of the angles of a triangle cannot exceed two right angles. Examine the proof critically and shew how is it that in spite of the proof to the contrary there exists consistent Plane Geometry in which the sum of the angles of a triangle exceeds two right angles.

4. Prove that the following theorem can be established without introducing any idea as regards parallels:—

The perpendicular bisector of the base of a triangle is also perpendicular to the line joining the middle points of the other two sides.

Deduce that the locus of the middle points of the segments joining the corresponding points of two congruent coplanar ranges is a straight line.

5. Shew that to every right-angled triangle with elements $a, b, c, (\lambda, \mu)$ there corresponds a tri-rectangular quadrilateral with sides c, m', a, l taken in order, the first and the last of these containing an acute angle β .

Deduce Bolyai's parallel construction.

6. Shew that the perpendiculars through the middle points of the sides of a hyperbolic triangle meet at a proper, improper or an ideal point.

Point out the use of the above theorem in the theory of corresponding points on a system of straight lines meeting at a proper, improper or an ideal point.

7. When are two polygons said to be equivalent? Shew that two triangles with a side of the one equal to a side of the other, and the same defect, are equivalent.

Shew that the locus of the vertices of all triangles on a hyperbolic plane standing on the same base and having the same area is an equidistant curve.

8. For a right-angled triangle with the elements $a, b, c, l, m, (c$ being the hypotenuse), prove that

$$\begin{aligned}\cosh c &= \sinh l \sinh m \\ &= \cosh a \cosh b.\end{aligned}$$

Show that the length of any side of a regular rectangular pentagon is $\log(c + \sqrt{c})$, where $c = \frac{1}{2}(1 + \sqrt{5})$, (the constant is taken to be unity).

9. Prove that the Cartesian formula for the arc element on the hyperbolic plane is

$$ds^2 = \cosh^2 \frac{y}{k} dx^2 + dy^2.$$

Find the length s of the arc of the limiting-curve

$$e^{\frac{x}{k}} = \cosh \frac{y}{k},$$

and obtain a geometrical interpretation for the constant k .

10. Prove that the area of a circle of radius r is

$$4\pi k^2 \sinh^2 \frac{r}{2k}$$

The vertices of a hyperbolic triangle all lie at infinity. Prove that the area of the inscribed circle is to the area of the triangle as $(4\sqrt{3}-6) : 3$.

11. Prove that in the quadrilateral with three right angles (x, y, x', y') , in which the sides x', y' include the obtuse angle, if y' is kept fixed and x tends to zero, the ratio $x' : x$ tends to a finite limit $\phi(y')$ from above, and this ratio is less than $\phi(y)$.

(Non-Euclidean Geometry—Second Paper)

EIGHTH PAPER

Examiners— $\left\{ \begin{array}{l} \text{DR. S. M. GANGULY, D.Sc.} \\ \text{MR. R. C. BASU, M.A.} \end{array} \right.$

The questions are of equal value.

ANY SIX questions carry full marks.

1. (a) If two planes in a space of four dimensions have only one point in common, prove that through an external point, one and only one plane can be drawn, which will meet the given planes in straight lines.

(b) Prove that if two planes meet in one point only, there exists no direction in either parallel to a direction in the other.

2. Show that the projection of a straight line upon a plane is a straight line or part of a straight line.

When is the projection only a point?

Prove that if the line and the plane do not lie in the same hyperplane, the projecting lines form the generators of a hyperbolic paraboloid.

3. (a) Prove that, in general, a hyperplane cannot be made to pass through more than four *arbitrary* points in the Fourfold.

(b) Show that through a line, not lying in a plane absolutely perpendicular to a given plane, there passes one and only one hyperplane perpendicular to the given plane.

4. (a) Prove that two simple rotations in the Fourfold can be combined into a simple rotation, only when the axis-planes of the two component rotations lie in one and the same hyperplane.

(b) Half-lines a, b, c, d emanating from a point O form an orthogonal frame. Explain, with the help of a diagram, what positions will be occupied by the internal bisectors of the angles ad and bc , if the frame is rotated through 180° about the internal bisector of ac .

5. Define *orientation-cosines* of a plane in the Fourfold, and obtain an expression for determining the critical angles between any two planes in terms of their orientation-cosines.

6. If two planes β and γ are isocline to a plane α in opposite senses, show that there exists one and only one pair of planes, perpendicular to each of α, β , and γ .

If both the angles of isoclinism are ϕ , show that β and γ intersect in a line, making a dihedral angle 2ϕ .

7. If θ_1 and θ_2 are the *critical* angles between two planes, prove that a triangle of area S on the first plane projects on to the second plane into a triangle of area $S \cos \theta_1 \cos \theta_2$.

Prove that the triangles are similar when the two planes are isocline.

8. Write a short note on the use of 'elements at infinity' in four dimensional geometry.

Distinguish between *parallel* and *half-parallel* planes, and explain the relation in which they stand to the hyper-plane at infinity.

Prove that if a plane perpendicular to one of two absolutely perpendicular planes does not contain their point of intersection, it is *half-parallel* to the other.

9. Find an expression for the radius of the hypersphere passing through any five points in the Fourfold whose mutual distances are given.

Can you use this for finding the *boundary-content* of a hypersphere circumscribing a regular pentahedroid of unit edge?

10. When are two figures said to be *symmetrically* situated with respect to a hyperplane?

Obtain the equation of the hypersphere which is symmetrically situated to the hypersphere

$$(x-1)^2 + (y-2)^2 + (z-3)^2 + (w-4)^2 = 625$$

with respect to the hyperplane $x+y=0$.

11. Define the following:—

Hyperconical hypersurface, hypercone, double cone, hypercube.

Prove that the diagonal of a hypercube is twice as long as the edge.

12. Give a brief history of the development of the geometry of four dimensions from the middle of the last century up to the present day, touching upon the more important contributions, both synthetic and analytic, of the various schools of continental and American Mathematicians.

(Modern Geometry—Second Paper)

SEVENTH PAPER

Examiners— $\left\{ \begin{array}{l} \text{DR. S. M. GANGULI, D.Sc.} \\ \text{DR. S. D. MUKHERJI, M.A., Ph.D.} \end{array} \right.$

The questions are of equal value.

ANY SIX questions carry full marks.

1. Explain by means of an illustration that there are always two correlative methods by which geometrical figures may be generated and their properties deduced.

Prove that the anharmonic ratio of the four straight lines which connect four fixed points on a conic with a variable point on the same is constant.

State the correlative theorem.

2. Prove that any one-dimensional geometric form, consisting of four elements, is projective with any of the forms derived from it by interchanging the elements in pairs.

Hence shew that there are six different anharmonic ratios of a range of four points.

Discuss the cases of *harmonic* and *equianharmonic* ranges.

3. When are two figures said to be in *perspective*? Prove that if two homographic pencils in the same plane have a corresponding ray the same in both, they are in perspective.

If the vertices of two triangles are in perspective, the intersections of their corresponding sides are collinear.

4. A given line in a plane is projected to infinity, while two given angles in the same plane are projected into angles of given magnitude on to another plane properly chosen. Determine the vertex of projection.

Prove that a triangle can be so projected that three given concurrent lines through its vertices become the medians of the triangle in the projection.

5. Define an *involution range* of points, and give a simple geometrical construction for such a range with the help of a coaxial system of circles.

Can you generalize this so as to obtain Desargues' Theorem?

Construct by points a conic of which five points P, Q, R, S, T are given.

6. Given two pairs of points belonging to an involution range on a conic, shew how to find the mate of another point on the conic.

Prove that a pencil in involution is either such that every ray is at right angles to its conjugate, or else it contains one and only one pair of conjugate rays including a right angle.

7. Show how you can construct the polar of a given point with respect to a conic.

Construct a self-conjugate triangle with regard to a given conic.

8. Prove that if two triangles circumscribe the same conic, their six vertices lie on another conic.

If two conics are such that a triangle can be inscribed in the one so as to circumscribe the other, prove that there exist an infinite number of other triangles which possess the same property.

9. Prove that the circle circumscribing any triangle which is self-conjugate with regard to a conic is cut orthogonally by the director circle.

Discuss the cases when the given conic is (1) a parabola, (2) an equilateral hyperbola.

10. State and prove Pascal's theorem on a hexagon inscribed in a conic.

Use this to prove that if two triangles are in homology, the points of intersection of the sides of the one with the non-corresponding sides of the other lie on a conic.

Deduce that in a triangle inscribed in a conic the tangents at the vertices meet the respectively opposite sides in three collinear points.

11. State Hilbert's five groups of axioms.

With the help of the axioms of congruence, prove that if in any two triangles one side and the two adjacent angles are respectively congruent, the triangles are congruent.

(Modern Geometry—First Paper)

EIGHTH PAPER

Examiners— { DR. R. N. SEN, M.A., PH.D.
MR. R. C. BASU, M.A.

The questions are of equal value.

Only six questions are to be attempted.

1. Give a purely projective proof of Desargues' theorem on two coplanar triangles in perspective. State whether a projective proof can be given without assuming the existence of the third dimension.

If there exists a triangle whose vertices lie on three given concurrent lines and whose sides pass through three given collinear points, shew that there exists an infinity of such triangles.

2. Define the harmonic derivative of three points lying on a line, and shew that it is a *compact* set of points.

The points A, B of a line l are harmonically separated by the points C, D . Prove that if A and B are kept fixed, C and D move in opposite senses along l , while if A and C are kept fixed, B and D move on l in the same sense.

3. When are two figures said to be projective?

$ABC, A'B'C'$ are two triads of points on different coplanar lines l and l' . Establish by a construction in their plane the projectivity $(ABC \dots) \wedge (A'B'C' \dots)$ between the rows on l and l' .

A triangle $A'B'C'$ is inscribed in a triangle ABC . Shew that there are unlimited number of triangles simultaneously circumscribed to ABC and inscribed in $A'B'C'$.

4. Define an involution of points on a line. Shew that a projectivity connecting two coplanar rows can always be regarded as the resultant of two involutions. If the resultant of two given involutions is an involution, shew that the given involutions are commutative and conversely.

5. If a conic passes through six points A, B, C, D, E, F , the opposite pairs of sides of each of the sixty different hexagons that can be formed with these points intersect in collinear points.

If two triangles be in perspective the six points of intersection of the non-corresponding sides lie on a conic and the axis of perspective is one of the Pascal lines of the six points.

6. Prove Standt's theorem that if ABC be any triangle inscribed in a conic and S the pole of BC , then any line through S meets AB, AC in conjugate points. Apply the theorem for the solution of the problem: construct the conic which passes through a given point and touches a given conic at two given points on it.

7. State how, from a given projectivity connecting two axial pencils whose bases are askew, we can obtain a ruled surface, having the following properties:—

(i) No line, except a generator, can meet the surface in more than two points.

(ii) Through any line that is not a generator we cannot draw more than two tangent planes to the surface.

Prove that the points of contact of a tangent cone to the surface from an external point lie on a conic.

8. State data fixing polarity and describe a case in which the polarity cannot be effected by a conic.

Prove that any two corresponding triangles in a plane homology, which have no common elements, determine a polarity in which they are relative polar triangles.

9. Give Standt's definition of a complex point and a complex line. When is a complex point said to be conjoint to a complex line?

Shew that the two conjugate complex points defined by any elliptic involution are the foci of that involution.

10. Shew that if c, c_1, c_2 are three casts,

$$c(c_1 + c_2) = cc_1 + cc_2.$$

Given three base points with indices 0, 1, ∞ , state how to obtain the points whose indices satisfy the equation $x^2 + 1 = 0$.

11. If x and x' denote the indices of two points on a conic, and a, b, c, d are four constants such that $ad \neq bc$, shew that the equation

$$axx' + bx + cx' + d = 0$$

fixes a projectivity on the conic between the two points. What is the condition that the projectivity is an involution?

12. Two points P, P' are conjugate with respect to a given conic, and their join passes through a fixed point S . Shew that there is, in general, a one-one correspondence between P and P' . Note the positions where the one-one correspondence fails. Shew how inversion may be regarded as a particular case of this transformation.

MIXED MATHEMATICS

FIRST PAPER.

The questions are of equal value.

First Half

Examiner—MR. K. M. BASU, M.Sc.

Attempt THREE questions only.

1. Show that the equations of equilibrium of a system under a field of forces and subject to equations of condition $L_1 = 0, L_2 = 0, \dots$ may be expressed as the vanishing of the differential co-efficients of a single function

$$\Phi \equiv II + \lambda_1 L_1 + \lambda_2 L_2 + \dots,$$

where II is the potential function of the forces and $\lambda_1, \lambda_2, \dots$ are the Lagrangian multipliers.

If two heavy particles connected by a rigid bar without weight lie at rest inside a smooth sphere prove that (1) the points must lie in a vertical plane containing the centre of the sphere, (2) a point dividing the line connecting the particles in the inverse ratio of their masses must be vertically below the centre of the sphere, and (3) the azimuth of the plane containing the particles will be indeterminate.

2. (1) Show that the invariant of two wrenches of intensities P, P' and pitches p, p' is

$$P^2 p + P'^2 p' + PP' \{ (p + p') \cos \theta + r \sin \theta \},$$

where θ is the angle and r the shortest distance between the axes of the wrenches.

(2) Show that the work done by a wrench, of intensity R and pitch p about a given screw, when the body is given a small twist $\delta\omega$ about another screw of pitch p^* , is

$$R\delta\omega\{(p+p^*)\cos\theta - r\sin\theta\},$$

where θ and r have the same significance as before.

3. Assuming the Bernoulli-Eulerian relation between bending moment and curvature, show that, if a uniform beam (of negligible weight) AB , of length l , is supported at its ends and loaded with a weight W at a point Q ($AQ=\xi$), the equation of AQ is

$$EIy = \frac{W(l-\xi)}{6l} \{\xi(2l-\xi)x - x^3\},$$

and that of QB is

$$EIy = \frac{W\xi}{6l} \{(l^2 - \xi^2)(l-x) - (l-x)^3\},$$

where E, I have their usual significance.

Deduce that the deflection at any point P when the load is at Q is equal to the deflection at Q when the same load is at P .

4. If a heavy body rests on a rough fixed surface, show that when the height of the C.G. of the former is a harmonic mean between the radii of curvature of the two surfaces at the point of contact in the position of equilibrium, the equilibrium will be stable or unstable according as

$$\frac{d^2}{ds^2}\left(\frac{1}{\zeta}\right) + \frac{d^2}{ds'^2}\left(\frac{9}{\zeta'}\right) < -\frac{(\zeta+\zeta')(\zeta+2\zeta')}{\zeta^2\zeta'^2}$$

provided the contact is at vertices, where s, s', ζ, ζ' have their ordinary significance.

A uniform heavy bar, AB , movable in a vertical plane round a fixed smooth axis passing through A has a string attached to the end B ; this string passes over a fixed pulley C vertically over A . Show that there will be three positions of equilibrium; and discuss their stability and instability.

5. Prove that for a string resting in limiting equilibrium on a rough surface

$$dT + F_t ds + \mu R ds \cos\psi = 0, \quad T/\zeta + F_n = R, \quad T \tan \chi/\zeta + F_p + \mu R \sin\psi = 0,$$

where T is the tension, ds the element of length of the string, ζ the radius of curvature of the normal section of the surface containing the tangent line to the string, χ the angle between the normal to the surface and the principal normal, R the normal reaction of the surface per unit length, ψ the angle between the tangent line and the direction of friction, μ the coefficient of friction, and F_t, F_n, F_p the forces acting on the string per unit length in the directions of the tangent, normal to the surface and their mutual perpendicular respectively.

A fine string (of inconsiderable weight) wound round a right circular cylinder in the form of a helix, is acted on by two forces F, F^* at its extremities. Show that when the string borders on motion,

$$\log F^*/F = \pm s \cos \alpha / r,$$

where s is the length of the string in contact with the cylinder of radius r and α the angle of the helix.

Second Half

Examiner—DR. B. S. RAY, M.Sc., Ph.D.

Attempt Question No. 7 and ANY TWO of the rest.

6. Shew that if the potential of a particle of mass ' m ' at a distance r is $\frac{m\phi'''(r)}{r}$, then the potential of a uniform solid sphere of mass M and radius a at an external point at a distance r from the centre is

$$\frac{3M}{2a^2r} \{a[\phi'(r+a) + \phi'(r-a)] - [\phi(r+a) - \phi(r-a)]\},$$

where the functions $\phi'(x)$, $\phi''(x)$, $\phi'''(x)$ are successive derivatives of $\phi(x)$.

Consider in particular $\phi'''(x) = ke^{-\lambda x}$, where $\lambda > 0$, shew that the external field of the sphere is the same as that of a single particle at the centre ; and that the mass of this particle is

$$3M \left(\frac{\lambda a \cosh \lambda a - \sinh \lambda a}{\lambda^2 a^3} \right) \text{ if } \lambda > 0 \text{ or } M \text{ if } \lambda = 0.$$

Hence or otherwise deduce the potential of a solid sphere at an external point under the Newtonian law of force.

7. Prove that the second derivatives of the potential function at any point A inside the attracting matter satisfy the following relation:—

$$\frac{\partial^2 v}{\partial x^2} + \frac{\partial^2 v}{\partial y^2} + \frac{\partial^2 v}{\partial z^2} = \lim_{\Sigma \rightarrow A} \int_{\Sigma} \int_{\Sigma} \mu \frac{d^2}{dv} d\Sigma,$$

where ν is the direction of the normal (outwards) to Σ ; Σ is a small closed surface surrounding the point A ; and μ is the density. Hence or otherwise deduce Poisson's equation. If the lines of force due to an ellipsoidal shell at any external point be normal to the confocal ellipsoid through that point, prove that the potential satisfies the equation

$$2\ddot{V}''(\lambda) + V'(\lambda) \left(\frac{1}{a^2 + \lambda} + \frac{1}{b^2 + \lambda} + \frac{1}{c^2 + \lambda} \right) = 0.$$

Hence deduce

$$V = \frac{M}{2} \int \frac{d\lambda}{(a^2 + \lambda)(b^2 + \lambda)(c^2 + \lambda)}$$

[a , b , c are axes of the ellipsoidal shell].

8. Find the value of the attraction due to a thin circular plate at a point situated on the axis (i.e. normal through the centre of the plate). Taking one of the directions of the axis to be positive, show that the value in the immediate neighbourhood of the centre of the plate is $-2\pi\sigma$ or $+2\pi\sigma$ according as the point is on the positive or negative side of the plate, where σ is the surface density.

Find the form of the solid of revolution of given volume (density const.), whose attraction at a point situated on the axis of revolution and on the surface of the body is maximum.

9. Prove the fundamental lemma of calculus of variation and establish the existence of a potential function which takes up given boundary value. (Assume the existence of a function ϕ which makes the integral

$$I = \iiint_V \left[\left(\frac{\partial \phi}{\partial x} \right)^2 + \left(\frac{\partial \phi}{\partial y} \right)^2 + \left(\frac{\partial \phi}{\partial z} \right)^2 \right] dV$$

a minimum.)

10. Prove that the potential V of a homogeneous oblate spheroid of mass M at an external point is

$$V = \frac{M}{r} \left\{ 1 - \frac{3.P_2}{3.5} \left(\frac{ae}{r} \right)^2 + \frac{3.P_4}{5.7} \left(\frac{ae}{r} \right)^4 - \dots + \frac{(-1)^n 3.P'_n}{(2n+1)(2n+3)} \left(\frac{ae}{r} \right)^{2n} + \dots \right\},$$

where r, θ are the polar co-ordinates of P referred to the centre and the axis of revolution, and e is the eccentricity of the generating ellipse.

SECOND PAPER

The questions are of equal value.

First Half

Examiner—MR. HEMCHANDRA SENGUPTA, M.A.

Only THREE questions are to be attempted.

1. The motion of a particle in three dimensions being referred to polar co-ordinates, find the components of the velocity and acceleration along the radius vector, the tangent to the meridian, and the tangent to the parallel.

Determine the meridian, normal and transverse components of the acceleration of a point moving on the surface of the anchor ring

$$x = (c + a \sin \theta) \cos \phi$$

$$y = (c + a \sin \theta) \sin \phi$$

$$z = a \cos \theta.$$

2. Investigate the motion of a particle moving freely under gravity in a medium of which the resistance varies as the square of the velocity.

If the resistance varies as the n th power of the velocity, V_1, V_2 are the velocities at the two points where the direction of motion makes an angle ϕ with the horizon and V the velocity at the highest point; prove

$$\frac{1}{V_1^n} + \frac{1}{V_2^n} = \frac{2 \cos^n \phi}{V^n}.$$

3. Discuss the motion of a particle in a smooth curved tube lying in one plane and rotating in its plane with uniform angular velocity ω about a fixed point O in the plane, the particle being acted on by no force except the pressure exerted by the tube.

A fine smooth circular tube, radius $a/2$, rotates in its plane with uniform angular velocity ω about a fixed point O in its circumference, and a particle of unit mass moves within it under a resistance equal to k times the square of the relative velocity. If the particle be projected from the opposite end of the diameter through O so as to come to rest at O , its velocity relative to the tube when it has described an arc $a\theta$ will be given by

$$v^2 = \frac{\omega^2 a^2}{2(1+a^2 k^2)} \left\{ e^{ak(\pi-2\theta)} + \cos 2\theta - ak \sin 2\theta \right\}$$

4. A particle describes the conic whose equation is

$$Ax^2 + 2Cxy + By^2 + 2Dx + 2Ey + G = 0.$$

referred to any rectangular axes, prove the Hamiltonian expression for the force to the origin may be put into the form

$$F = \frac{h^2 \Delta r}{(Dx + Ey + G)^3}.$$

If r, p be the radius vector and perpendicular on the tangent at any point of the curve described by a particle under an attraction P to the pole and a force T along the tangent, show that

$$\frac{2Tp^2r}{\sqrt{r^2 - p^2}} = \frac{d}{dr} \left(p^3 P \frac{dr}{dp} \right).$$

5. Discuss the motion of a heavy particle on a smooth sphere, and show that the particle oscillates between two horizontal planes.

A particle of unit mass moves on the inner surface of a paraboloid of revolution of latus rectum $4a$, under the action of a repulsive force μr from the axis, where r is the distance from the axis. Show that if the particle is projected along the surface in a direction perpendicular to the axis with a velocity $2a\mu^{\frac{1}{2}}$ from a point at a distance $2a$ from the axis, it will describe a parabola.

Second Half

Examiner—PROF. K. KHASTAGIR, M.Sc.

Only THREE questions are to be attempted.

1. If a plane area immersed in a liquid revolve about any axis in its own plane, prove that the centre of pressure describes a straight line in the plane.

2. A body, floating in a heterogeneous liquid, is wholly immersed. It is rotated through a small angle about a horizontal axis, mass of liquid displaced remaining unaltered. Find the condition of stability, stating clearly the conditions that must be satisfied in your solution.

3. A solid of revolution floats with its vertex downwards, determine its form when the position of the metacentre is independent of the density of the liquid (supposed to be homogeneous).

4. Find the Cartesian Equation of the Capillary Curve.

5. Establish that an ellipsoid with three unequal axes, the smallest of which coincides with the axis of rotation, is a possible form of relative equilibrium for a mass of rotating liquid.

THIRD PAPER.

The questions are of equal value.

First Half

Examiner—MR. S. GUPTA, M.Sc.

Answer ANY THREE.

1. A heterogeneous ellipse

$$\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$$

has got its strata of uniform density, confocal ellipses, the density at any point on the minor axis varying as the distance from the centre. Find its moment of inertia about its major axis.

A, B, C, D, E, F , are the moments and products of inertia of a material body at any point, referred to a set of rectangular axes. Obtain the equation to its ellipsoid of gyration at that point.

2. Two wheels on spindles in fixed bearings suddenly engage so that their angular velocities become inversely proportional to their radii and in opposite directions. One wheel, of radius a and moment of inertia I_1 has angular velocity ω initially; the other, of radius b and moment of inertia I_2 , is initially at rest. Shew that their new angular velocities are

$$\frac{I_1 b^2}{I_1 b^2 + I_2 a^2} \omega \text{ and } \frac{I_1 a b}{I_1 b^2 + I_2 a^2} \omega.$$

Explain clearly the dynamical principle involved in the above case.

3. Two masses M and M' are connected by a string of length l , and mass m , passing over a cylindrical pulley of radius a and mass m' , not rough enough to prevent sliding. The system is allowed to move under gravity, and M descends. Find the acceleration of the system, and the angular acceleration of the pulley.

[μ is the coefficient of friction between the string and the pulley.]

4. Explain clearly the method of representative point for studying the problem of two dimensional collision of two imperfectly rough and imperfectly elastic bodies, particularly with reference to the following example:

A tennis ball (hollow) of radius a is struck, and moves with a spin Ω about a horizontal diameter perpendicular to the plane of the parabola described by its centre. Just before it strikes the ground, the velocity of the centre is $2a\Omega$ and the direction of motion makes an angle 60° with the vertical. Find the angle of rebound, if the coefficient of elasticity and the coefficient of friction be both $\frac{1}{2}$.

5. A smooth wire without inertia is bent into the form of a helix, which is capable of revolving about a vertical axis coinciding with a generating line of the cylinder on which it is traced. A small heavy ring slides down the helix, starting from a point in which this vertical axis meets the helix; prove that the angular velocity of the helix will be a maximum when it has turned through an angle θ given by the equation

$$\cos^3 \theta + \tan^2 a + \theta \sin 2\theta = 0,$$

a being the inclination of the helix to the horizon. [Regard the mass of the helix as zero.]

Second Half

Examiner—MR. BHUPENDRACHANDRA DAS, M.Sc.

Answer AN THE

6. Establish Euler's dynamical equations for a rigid body moving about a fixed point. In the absence of external forces, deduce the corresponding energy and the angular momentum integrals.

If Ω , I , and G be respectively the angular velocity, moment of inertia and moment of the acting forces about the instantaneous axis of rotation, show, by applying Euler's equations, that

$$I \dot{\Omega} + \frac{1}{2} \Omega \dot{I} = G.$$

7. If $q_1, q_2, q_3, \dots, q_n$ be a set of generalized co-ordinates of a dynamical system with kinetic energy T , and V be the potential energy of the extraneous forces acting on it, establish the Lagrangian equations

$$\frac{d}{dt} \left(\frac{\partial T}{\partial \dot{q}_r} \right) - \frac{\partial L}{\partial q_r} = 0, \quad (r=1, 2, 3, \dots, n)$$

where $L = T - V$. Show that when the geometrical relations do not contain the time explicitly, the equation of conservation of energy is always an integral of Lagrange's equations.

Show that when the energy functions are of the form

$$2T = \sum_r \phi_r(q_r) \dot{q}_r^2, \quad V = \sum_r \psi_r(q_r),$$

Lagrange's equations are soluble by separation of variables.

8. Write a short note on the use of Lagrange's method to find the initial motion of any system as it starts from a position of rest.

A uniform rod, movable about one extremity, has attached to the other end a heavy particle by means of a string, the rod and string being initially in one horizontal line at rest ; prove that the radius of curvature of the initial path of the particle is

$$\frac{4ab}{a+9b},$$

where a and b are the lengths of the rod and string ; also find the initial path of the particle.

9. Deduce the angular velocities of a rigid body, fixed at a point, about three perpendicular axes in the body ; passing through the point, in terms of the Eulerian co-ordinates.

A rigid body of mass M is moving in space in any manner, and its position is determined by the co-ordinates (x, y, z) of its centre of gravity, and the Eulerian angles θ, ϕ, ψ which the principal axes at the centre of gravity make with some fixed axes. Establish the expression for vis viva in the form

$$\begin{aligned} 2T = M(\dot{x}^2 + \dot{y}^2 + \dot{z}^2) + C \dot{\phi}^2 + \dot{\psi}^2 \cos^2 \theta \\ + (A \sin^2 \phi + B \cos^2 \phi) \dot{\theta}^2 + \sin^2 \theta \cdot A \cos^2 \phi + B \sin^2 \phi \dot{\psi}^2 \\ + 2(B - A) \sin \theta \sin \phi \cos \phi \dot{\theta} \dot{\psi}, \end{aligned}$$

where A, B, C are the principal moments of inertia at the centre of gravity.

10. Deduce, in generalized co-ordinates, the equations of motion for small oscillations of any dynamical system about a position of equilibrium, and give a brief outline of the method of solving these equations.

A uniform rod, of length $2a$, which has one end attached to a fixed point by a light inextensible string, of length $\frac{5a}{12}$, is performing small oscillations in a vertical plane about its position of equilibrium. Find its position at any time, and show that the periods of its principal oscillations are

$$2\pi \sqrt{\frac{5a}{3g}} \text{ and } \pi \sqrt{\frac{a}{3g}}.$$

FOURTH PAPER

The questions are of equal value.

First Half

Examiner-- DR. N. M. BOSE, D.Sc.

Only THREE questions should be attempted from THIS half.

1. (i) Prove that

$$\left(1 + \frac{1}{n}\right)^n$$

tends to a finite limit as $n \rightarrow \infty$, and that this limit is the sum of the convergent series

$$1 + \sum_{n=1}^{\infty} \frac{1}{n!}.$$

(ii) If $f(x)$ is a monotone decreasing positive function of x for $x \geq 0$, show that

$$\sum_{n=1}^{\infty} f(n) \quad \text{and} \quad \int_1^{\infty} f(x) dx$$

are either both convergent or both *strictly* divergent.

Deduce *any one* of the following:—

$$(a) \lim_{n \rightarrow \infty} \left[\sum_{m=1}^n \frac{1}{m} - \log n \right]$$

is a positive number less than 1 ;

$$(b), \lim_{n \rightarrow \infty} \frac{\log n!}{(n \log n - n)} = 1.$$

Or,

1A. (i) If a_n is positive and tends monotonically to zero as n tends to infinity, show that the series

$$\sum_0^{\infty} a_n \sin nx$$

is uniformly convergent in $\delta < x < 2\pi - \delta$, where δ is a positive number no matter how small.

(ii) If a_n satisfies the same conditions as in (i), show that a necessary condition for the convergence of the series

$$\sum_0^{\infty} a_n \text{ is that } na_n \rightarrow 0 \text{ as } n \rightarrow \infty,$$

but that this condition is not sufficient.

Given that the positive numbers r_n tend monotonically to infinity, show the series

is convergent for $x > \mu$ and divergent for $x < \mu$, where

$$\mu = \lim_{n \rightarrow \infty} \frac{\log n}{\log r_n}.$$

2. Explain clearly what is meant by the Riemann Integral of a bounded function $f(x)$ over a finite interval (a, b) , $a < b$.

How is the concept of integration extended to the case of a function which is unbounded in the neighbourhood of the lower limit of integration?

If $f(x) = u(x) + iv(x)$, where $u(x)$ and $v(x)$ are real and integrable R in (a, b) , prove that

$$\left| \int_a^b f(x) dx \right| \leq \int_a^b |f(x)| dx.$$

Show that if $f(x)$ is bounded and integrable R in (a, b) , so is also $|f(x)|$, but that the converse is not true; if however $f(x)$ is unbounded in the neighbourhood of a , the existence of

$$\int_a^b f(x) dx$$

does not imply the existence of

$$\int_a^b |f(x)| dx,$$

but the existence of the latter implies the existence of the former.

3. Prove that the radius of convergence of the power series $\sum_0^{\infty} a_n z^n$ is

$$\left(\limsup_n |a_n|^{1/n} \right)^{-1}$$

and that there is at least one singular point on the circumference of the circle of convergence.

If r_1 , r_2 , and r denote the radii of convergence of the series $\sum a_n z^n$, $\sum b_n z^n$, and $\sum (a_n + b_n) z^n$ respectively, show that $r = r_1$ if $r_1 < r_2$, and $r > r_1$ if $r_1 = r_2$.

Give a non-trivial example to show that in the latter case r may be as large as ∞ .

4. (i) Explain the term 'residue'.

Prove by contour integration

$$\int_{-\infty}^{\infty} \frac{dx}{1+x^2} = \pi.$$

(ii) Prove by integration round a suitable semi-circle indented at the centre

$$\int_0^{\infty} \frac{(\log x)^2}{1+x^2} dx = \frac{\pi^2}{8}.$$

5. State and prove Weierstrass's Theorem on the behaviour of a single-valued analytic function in the neighbourhood of an isolated essential singularity. State without proof Picard's Theorem and explain in what sense it is an improvement on Weierstrass's Theorem.

Given that a single-valued function $f(z)$ is analytic in the neighbourhood of the point a , the behaviour at a itself being uncertain, prove that a is a regular point, a pole or an essential singularity according as the function is bounded, tends to infinity as $z \rightarrow a$ or unbounded (without however always tending to infinity as $z \rightarrow a$) in the neighbourhood of that point.

Second Half.

Paper-setter—DR. B. S. RAY, M.Sc., Ph.D.

Examiner—DR. N. N. SEN, D.Sc.

6. If a periodic function $f(x)$ (of period 2π) be integrable in the interval $(0, 2\pi)$ prove that

$$\sum_{n=1}^{\infty} (a_n^2 + b_n^2) \leq \int_0^{2\pi} |f(x)|^2 dx,$$

a_n, b_n being the Fourier coefficients of the function $f(x)$.

With the help of the identity

$$\left(\left| a_n \right| - \frac{1}{n} \right)^2 \geq 0,$$

prove that the series

$$\sum_{n=1}^{\infty} \frac{|a_n|}{n} \text{ and } \sum_{n=1}^{\infty} \frac{|b_n|}{n}$$

are convergent.

If further $f(x)$ be continuous for all values of x and has a derivative $f'(x)$ integrable in $(0, 2\pi)$ then prove

$$a_n = -\frac{b'_n}{n}; \quad b_n = \frac{a'_n}{n},$$

where ' a'_n ' and ' b'_n ' are the Fourier coefficient of $f'(x)$.

Hence prove that the Fourier development of this function $f(x)$ is absolutely and uniformly convergent.

7. Discuss the method of finding the solution of a differential equation of second order in the neighbourhood of a nonessential singularity.

8. How will you proceed to find the solution of a differential equation of the second order in the form

$$u - \int_c^x K(x, \xi) v(\xi) d\xi.$$

(The integral to be taken along a suitable curve.)

In the case of Bessel equation

$$z^2 \frac{d^2 u}{dz^2} + z \frac{du}{dz} + z^2 u - \lambda^2 u = 0,$$

prove that the solution may be represented by

$$H_{\lambda}^{(1)}(z) = -\frac{1}{\pi} \int_{L_1} e^{-iz \sin \xi + i\lambda \xi} d\xi$$

$$H_{\lambda}^{(2)}(z) = -\frac{1}{\pi} \int_{L_2} e^{-iz \sin \xi + i\lambda \xi} d\xi$$

(for real part $h(z) > 0$, and L_1 and L_2 suitable curves you are to define).

If $J_{\lambda}(z)$ be defined by

$$\frac{1}{2} \left(H_{\lambda}^{(1)}(z) + H_{\lambda}^{(2)}(z) \right),$$

prove that for $\lambda = \text{an integer } (=n)$

$$J_n(z) = \frac{1}{2\pi} \int_{-\pi}^{\pi} e^{iz \sin \xi + in\xi} d\xi = \frac{1}{\pi} \int_0^{\pi} \cos(z \sin \xi - n\xi) d\xi.$$

9. Prove that for real values of λ the zeros of the Bessel function $J_{\lambda}(z)$ are either purely real or purely imaginary.

Prove also that for real $\lambda > -1$ the zeros are all real.

10. Obtain a solution of the differential equation

$$(1-z^2)\frac{d^2 P_n(z)}{dz^2} - 2z\frac{dP_n(z)}{dz} + n(n+1)P_n(z) = 0$$

in the form

$$P_n(z) = \frac{1}{2\pi i} \int_c \frac{(\xi^2-1)^n}{2^n(\xi-z)^{n+1}} d\xi.$$

Prove that

$$(i) \quad n. P_n(z) - (2n-1)zP_{n-1}(z) + (n-1)P_{n-2}(z) = 0$$

$$(ii) \quad P_n(z) = \frac{1}{\pi} \int_0^\pi \{z + (z^2-1)^{\frac{1}{2}} \cos \phi\}^n d\phi.$$

FIFTH PAPER

The questions are of equal value

First Half

Examiner:-DR. SUBHADAN GHOSH, D.Sc.

THREE questions to be answered.

1. Find the two-dimensional motion of a liquid in an elliptic cylinder which is rotating about its axis with a given angular velocity ω .

Shew that the paths of the particles relative to the cylinder are ellipses similar to the boundary ellipse, described in periodic time

$$\frac{\pi(a^2 + b^2)}{ab\omega},$$

a, b being the semi-axes of the elliptic section.

2. An ellipsoid moves with a given velocity in the direction of one of its principal axes, in an infinite mass of liquid at rest at infinity. Find the velocity potential.

Calculate the kinetic energy of the liquid.

3. A pendulum, of mass M , with an ellipsoidal cavity (semi-axes a, b, c) filled with liquid of mass m , oscillates about a horizontal axis parallel to the c -axis of the ellipsoid ; prove that the length of the equivalent simple pendulum is

$$\left[Mk^2 + m\{d^2 + (a^2 - b^2)^2/5(a^2 + b^2)\} \right] / (M + m)l,$$

where k is the radius of gyration of M about the axis of suspension, d the distance of the centre of the ellipsoid, and l the distance of the centre of gravity of the whole mass from the axis.

4. Discuss the motion of a thin rectilinear vortex filament in an infinite mass of liquid, outside a circular cylinder whose axis is parallel to the filament.

When an infinite liquid contains two parallel equal and opposite rectilinear vortices at a distance $2b$, prove that the stream lines relative to the vortices are given by the equation

$$\log \frac{x^2 + (y-b)^2}{x^2 + (y+b)^2} + \frac{y}{b} = c ;$$

the origin being the middle point of the join, which is taken for the axis of y .

5. Simple harmonic waves are propagated in deep water, in a given direction. Find the velocity potential and show that the velocity of waves of length λ , is given by

$$v^2 = \frac{g\lambda}{2\pi}.$$

A fixed buoy in deep water is observed to rise and fall twenty times in a minute, prove that the velocity of the waves is about ten and a half miles per hour.

Second Half

Examiner DR. D. N. MALLIK, B.A., SC.D., F.R.S.E.

THREE questions to answered.

1. Discuss the physical meaning of velocity potential.

Obtain equation of continuity in terms of velocity potential for an incompressible fluid in spherical co-ordinates and explain how you would solve it in zonal harmonics.

2. Obtain the equations of motion of a homogeneous inelastic fluid by the flux method, and integrate it in the case in which the motion is steady.

Hence or otherwise prove that these elements of fluid which at any instant have no rotation, remain during whole motion without rotation.

3. An infinite mass of fluid is acted upon by a force $\mu r^{-\frac{3}{2}}$ per unit mass directed to the origin. If initially the fluid is at rest and there is a cavity in

the form of the sphere $r=c$ in it, shew that the cavity will be filled up after an interval of time

$$\left(\frac{2}{5\mu}\right)^{\frac{1}{2}} c^{\frac{5}{4}}.$$

4. Discuss the method of conjugate functions for the solution of fluid motion.

Consider as an example

$$\omega = -m \log \frac{z^2 - a^2}{z^2 + a^2},$$

and investigate the nature of the corresponding images.

5. Obtain expression for the kinetic energy of irrotational motion when it is (1) cyclic ; (2) acyclic.

Liquid extending to infinity contains a number of solids fixed or moving. If ϕ be the velocity potential of that part of the motion of the liquid which is due to the solids, shew that ϕ is acyclic, and that

$$\int \phi \frac{\partial \phi}{\partial n} ds$$

taken over a sphere at infinity is zero.

6. Investigate the motion of a sphere under gravity in a frictionless fluid at rest at infinity, which is projected at a given inclination to the vertical.

Find the pressure at any point of the sphere.

SIXTH PAPER.

The questions are of equal value.

Not more than THREE questions to be attempted from EACH half.

First Half

Examiner—MR. PHANISDRAL GANGULY, M.A.

1. (a) Two stars whose right ascensions and declinations are α , δ and α' , δ' rise at the same time at a place of latitude ϕ .

Prove that

$$\tan^2 \delta + \tan^2 \delta' - 2 \tan \delta \tan \delta' \cos (\alpha - \alpha') = \sin^2 (\alpha - \alpha') \cot^2 \phi.$$

(b) Show that the latitude of a place ϕ can be determined by an observation of the latitude of the pole star which at the time of observation has an hour angle h and a polar distance p and that the formula is approximately

$$\phi = a - p \cos h + \frac{1}{2} \sin 1'' p^2 \sin^2 h \tan a.$$

2. (a) If t be the Greenwich mean time, M_0 , M_1 , E_0 , E_1 , the sidereal times and the equations of time at the preceding and the succeeding Greenwich mean noons, and if A be the observed apparent solar time, find the longitude.

(b) It has been proved that the equation of time expressed in second is

$$90 \sin L + 452 \cos L - 592 \sin 2L,$$

where L is the mean longitude of the sun. Prove from this expression that the equation of time vanishes at least four times annually.

3. (a) Prove Simpson's formula for the refraction,

$$\rho = \frac{1}{n} \left\{ z - \sin^{-1} \left(\frac{\sin z}{\mu_n} \right) \right\}$$

(b) Explain the methods of determining atmospheric refraction from observation.

4. (a) Define *aberration*. Explain fully the different kinds of aberration.

(b) Show that the effects of diurnal aberration on α , δ are given by

$$\Delta \alpha = 0''.32 \cos \phi \cos h \sec \delta$$

$$\Delta \delta = 0''.22 \cos \phi \sin h \sin \delta.$$

5. What are the *independent day numbers*?

Prove the general formula for precession and nutation in right ascension and declination. Hence deduce

$$\Delta \alpha = f + \frac{1}{15} g \sin (G + \alpha) \tan \delta$$

$$\Delta \delta = g \cos (G + \alpha).$$

Second Half

Examiner — Dr. S. C. KAR, M.A., Ph.D.

6. (i) If the helio-centric latitude and longitude of a star are β, λ , show that the corresponding geocentric quantities are

$$\beta - \sigma \sin \beta \cos (\odot - \lambda), \lambda + \sigma \sec \beta \sin (\odot - \lambda),$$

if σ is the parallax and \odot the longitude of the sun.

(ii) Prove that the maximum variation in the apparent distance of a star S with parallax σ from a star S' with no parallax is

$$2\sigma (\sin^2 \beta \cos^2 B + \sin^2 B)^{\frac{1}{2}},$$

where β is the latitude of S and B the angle subtended at S by S' and either pole of the ecliptic.

7. (i) Explain how a quadratic equation may be framed for the determination of the ecliptic limits for a lunar eclipse.

(ii) Prove that the maximum duration of totality of a lunar eclipse is

$$\frac{2(\pi_0 + \pi'_0 - r - r')}{m \sec i} \left(1 + \frac{s \cos^2 i}{m} \right) \text{ hours}$$

approximately, if atmospheric refraction be neglected, $\pi_0, \pi'_0, r, r', s, m$, being horizontal parallaxes, semi-diameters and hourly motions in longitude of the sun and moon respectively and i the inclination of the moon's orbit to the ecliptic.

8. (i) Explain how graduations are effected on a horizontal sun-dial of the usual form.

(ii) The lengths of the shadows of a vertical rod of unit length are observed at apparent noon on two days separated by a quarter of a year and are found to be s and s' . Assuming the sun to move uniformly in the ecliptic, prove that the longitude of the sun on the first of the two dates is

$$\frac{1}{2} \sin^{-1} \left\{ \frac{\sin^2 \omega - \sin^2 \beta}{\sin^2 \omega \cos \beta} \right\},$$

where

$$\tan \beta = \frac{s \sim s'}{1 + ss'}$$

and ω is the obliquity.

9. (i) Supposing the orbits of the earth and a planet to be circular and in the same plane, find an expression for the maximum brightness of the planet as seen from the earth.

(ii) The mean distance of Venus from the sun being $\cdot 72$ of that of the earth, determine the greatest altitude at which Venus, assumed to have a circular orbit in the plane of the ecliptic, may be visible after sunset in a given latitude and the time of the year at which this may occur.

10. (i) Derive Mayer's formula for the reduction of meridian observations made with an erroneous transit instrument.

(ii) If the declination wire in the meridian circle instead of being exactly horizontal make an angle $90^\circ - I$ with the meridian and if δ' be the observed declination of a star of true declination δ , and near the meridian with an hour angle t , show that

$$\tan \delta = \tan \delta' \cos t + \sec \delta' \sin t \tan I.$$

(Elasticity)

SEVENTH PAPER

The questions are of equal value.

First Half

Examiner—DR. JYOTIRMAJ GHOSH, D.Sc.

Only THREE questions are to be attempted.

1. Find in terms of six components of strain the length r_1 of a line which in the unstrained state has a short length r and the assigned direction (l, m, n) .

How do you interpret the components of strain?

Find the strain-components in curvilinear orthogonal co-ordinates.

2. Deduce, in terms of displacements, the equations of equilibrium of an elastic body referred to polar co-ordinates.

There being no body forces, shew that the radial components of displacement, rotation and dilatation satisfy the equations

$$\mu \nabla^2 (ru_r) + (\lambda + \mu) r \frac{\partial \Delta}{\partial r} - 2\mu \Delta = 0,$$

and

$$\nabla^2 (r\bar{w}_r) = 0.$$

3. Deduce Clapeyron's Equation of three moments.

When the spans are equal, shew that this equation may be written as a linear difference equation in the form

$$M_{n-1} + 4M_n + M_{n+1} = \frac{1}{2}wl^3.$$

Find its solution.

4. In a twisted prism, if τ be the twist and $C\tau$ the moment of the couples applied at the ends, shew that the potential energy per unit of length of the prism is $\frac{1}{2}C\tau^2$.

When the section of the prism is an ellipse, find the value of the above expression in terms of rigidity, twist and lengths of semi-axes.

5. Solve the flexure-problem for a beam whose cross-section is bounded by two confocal ellipses.

Second Half

Examiner—DR. BIBHUTI BHUSAN SEN, M.Sc.

Only THREE questions are to be attempted.

1. Prove the existence of the strain-energy function and deduce its form for an isotropic solid.

2. In the case of plane stress in a body held by forces applied at the boundary, shew that the stresses in polar co-ordinates can be expressed by

$$\widehat{rr} = \frac{1}{r^2} \frac{\partial^2 \chi}{\partial \theta^2} + \frac{1}{r} \frac{\partial \chi}{\partial r}, \quad \widehat{\theta\theta} = \frac{\partial^2 \chi}{\partial r^2}, \quad \widehat{r\theta} = -\frac{\partial}{\partial r} \left(\frac{1}{r} \frac{\partial \chi}{\partial \theta} \right).$$

Find the stresses when

$$\chi = -\frac{F'}{\pi} r\theta \sin \theta$$

and shew that they are produced by a single force acting at the origin.

3. In the unstrained state, the central line of a ring of small cross-section forms a circle of radius 'a'. If it is acted on by normal pressures of magnitude X per unit of length, find the condition for stability of equilibrium.

4. Explain Saint Venant's principle.

Obtain the expression for the potential energy of a thin rectangular plate bent by terminal couples.

5. Write a short essay on the *Elastica*.

(Elasticity)**EIGHTH PAPER**

The questions are of equal value.

First Half

Examiner—DR. JYOTIRMAJ GHOSH, D.Sc.

Only THREE questions are to be attempted.

1. Prove that a solution of the equations of free vibration of a body, which also satisfies given initial conditions of displacement and velocity, is unique.

Shew that the rate of increase of energy of a vibrating body enclosed by a surface S is equal to the rate at which the work is done by the tractions across S .

2. Verify that when a force acts at the origin parallel to the axis of z , the expressions for displacement can be put in the form

$$u = \frac{Axz}{r^3}, \quad v = \frac{Ayz}{r^3}, \quad w = A \left(\frac{z^2}{r^3} + \frac{\lambda + 3\mu}{\lambda + \mu} \frac{1}{r} \right)$$

Find also the magnitude of the force.

3. The surface displacements of an elastic sphere, free from the action of body-forces, being given in terms of surface harmonics, find the displacements at any point of the sphere.

4. A body whose upper boundary is a horizontal plane supports a weight W placed at a point on it; find the displacements in the body and also the tractions across any horizontal plane.

5. Deduce the usual equation of equilibrium of a thin plate bent by transverse forces.

Find the transverse displacement of any point of a thin uniform circular plate when the total load W is distributed uniformly and the plate is clamped at the edge.

Second Half

Examiner—MR. B. B. SEN, M.Sc.

Only THREE questions are to be attempted.

1. Establish the equation

$$\frac{\partial^2 \phi}{\partial x^2} = c^2 \nabla^2 \phi$$

for an elastic medium.

Obtain Poisson's solution in the form

$$\phi = \frac{1}{4\pi} \frac{\partial}{\partial n} (\bar{\phi}_0) + \bar{\phi}_0.$$

2. Deduce the equation for radial vibration of a thin spherical shell, and obtain the period of vibration in the form

$$\pi a \sqrt{\frac{\rho}{\mu} \cdot \frac{1-\sigma}{1+\sigma}}.$$

3. Obtain the equation of flexural vibration of a thin elastic rod. Find the frequency equation when one end is clamped and the other free.

4. Shew that, if the medium is such that

$$2W = A(e_{xx} + e_{yy} + e_{zz})^2 + \frac{1}{2}I_1(e_{yy}^2 - 4e_{yy}e_{zz}) \\ + \frac{1}{2}M(e_{xx}^2 - 4e_{xx}e_{zz}) + \frac{1}{2}N(e_{xy}^2 - 4e_{xx}e_{yy}),$$

the wave-surface is made up of a sphere and the surface which is the envelope of the plane $lx + my + nz = c$ subject to the condition.

$$c^2 - \frac{l^2}{\rho} + \frac{m^2}{\rho} + \frac{n^2}{\rho} = 0.$$

5. Obtain the kinematical and dynamical conditions that hold good at the surface of discontinuity when a disturbance travels in an elastic medium.

Shew that in an æolotropic medium, there are three real wave velocities answering to any direction of propagation.

(Advanced Astronomy—First Paper.)

SEVENTH PAPER

Examiners— $\left\{ \begin{array}{l} \text{MR. K. M. BASU, M.Sc.} \\ \text{DR. BRATISANKAR RAY, M.Sc., Ph.D.} \end{array} \right.$

The questions are of equal value.

Attempt six questions only.

1. Discuss the problem of conformal representation in the theory of map-making. Show that 'Mercator's projection' is conformal, and explain its relation to 'stereographic projection'.

In Gauss' projection of the sphere the meridians are represented as straight lines passing through a point O , and the angle between any two such lines is $h\lambda$, where λ is the difference of longitude between the two corresponding meridians. The parallels of latitude are circular arcs with their centres at O . If the projection is to be conformal, show that the radius of the arc corresponding to colatitude u must be

$$h(\tan \frac{1}{2} u)^2,$$

where h is a constant.

2. (1) Write a short note on the function of the 'Besselian elements' in predicting the circumstances of a solar eclipse at any particular point on the earth's surface. •

(2) Establish the fundamental equation for the determination of the commencement or ending of a partial solar eclipse in the form:

$$n^2 t^2 + 2mnt \cos(M - N) + m^2 = L^2,$$

where m, n, M, N, L are auxiliary quantities you are to define.

3. (1) Show that the total aberrational displacements of a star (λ, ρ) resulting from the motion of the earth in its elliptic orbit are

$$\Delta \lambda = -k \sec \beta \cos(\Theta - \lambda) + ek \sec \beta \cos(\tilde{\omega} - \lambda),$$

$$\Delta \beta = -k \sin \beta \sin(\Theta - \lambda) + ek \sin \beta \sin(\tilde{\omega} - \lambda),$$

where Θ is the sun's geocentric longitude, $\tilde{\omega}$ the longitude of the perihelion, e the earth's eccentricity, and k the aberration constant.

(2) In the preceding case when the earth's orbit is *circular*, prove that the terms in the aberrations in latitude and longitude depending on the square of k are in order:

$$\frac{1}{2} k^2 [\sin 1'' \tan \beta \cos 2(\Theta - \lambda) + p]$$

and

$$\frac{1}{2} k^2 [\sin 1'' \tan^2 \beta \sin 2(\Theta - \lambda) + q]$$

where Θ is the true longitude of the sun, and p, q to be found out.

4. Assuming Bessel's hypothesis of pressure and density in the form

$\rho \delta_0 / \rho_0 \delta = e^{-\alpha s}$, and Gladstone and Dale's law connecting density and refractive index, show that the differential equation for refraction can be expressed in the form:

$$d\theta/ds = \frac{-\alpha \beta \sin z(1-s) e^{\beta s} ds}{(1-\alpha)[\cos^2 z - 2\alpha(1-e^{-\beta s}) + (2s-s^2) \sin^2 z]^{\frac{1}{2}}}$$

where $\alpha/(a+x) = 1-s$, $\alpha = 2k\delta_0/(1+4k\delta_0)$, $\beta = \alpha(l-l)/hl$.

Prove that, within the limits of zenith distance in which the refraction may be taken as $k \cdot \tan(\text{zen. dis.})$ the apparent place of a star describes each sidereal day, a conic section, which is an ellipse or hyperbola according as $\sin^2 \phi \leq \cos^2 \delta$, where δ is the decl. of the star and ϕ the lat. of the place.

5. (1) If μ_α, μ_δ are the components of annual proper motion of a star (α, δ) at time t with reference to a particular equinox and equator, and if μ'_α, μ'_δ are the components of proper motion at time t' with reference to the same equinox and equator, prove that, $t' - t$ being expressed in years,

$$\mu'_\alpha - \mu_\alpha \times (2\mu_\alpha \mu_\delta \tan \delta)(t' - t) \sin 1'',$$

$$\mu'_\delta - \mu_\delta = -225 \mu_\alpha^2 \sin \delta \cos \delta (t' - t) \sin 1''.$$

(μ_α is expressed in seconds of time and μ_δ in seconds of arc.)

(2) Show that the *parallactic motion* of a star is $IIU \sin \lambda/4.74$, where λ is the angle subtended at the sun by the star and the solar apex, II the annual parallax of the star, U the velocity of the sun towards its apex (in kilometres/sec.).

(Assume the number of seconds in a year = 31.56×10^6 , and the radius of the earth's orbit = 149.5×10^6 kilometres).

6. Prove that, if the sun have a proper motion in space towards a point in the heavens of right ascension A and of declinations D , the rates of variation of the co-ordinates of a star, right ascension α , declination δ , annual parallax σ , contain terms of the form

$$\dot{\alpha} = \frac{\sigma \cos D \sin (\alpha - A)}{T \cos \delta}; \quad \dot{\delta} = \frac{\sigma \cos D \cos (\alpha - A) \sin (\delta - \phi)}{T \cos \phi}$$

$$\dot{r} = -\frac{a \cos D \cos (\alpha - A) \cos (\delta - \phi)}{T \cos \phi}$$

where $\tan \phi \equiv \tan D \sec (A - \alpha)$; a is radius of the earth's orbit, T is the time of the sun's traversing the distance a and r is the velocity of separation of the sun and star.

7. Establish formulæ for determining the effect of Precession in R. A. and declination of a star very near to the celestial pole.

Deduce from this, the approximate expressions for reduction

$$\Delta \alpha = \alpha' - \alpha = \frac{l'_0 \sin \alpha}{1 - l'_0 \cos \alpha} + \frac{\Delta l' \sin \alpha}{(1 - l'_0 \cos \alpha)^2}$$

$$\delta = \delta_0 + \theta \cos \left(\alpha + \frac{\Delta \alpha}{2} \right) \sec \Delta \alpha$$

θ being the distance between the poles at the two epochs and $l' = \sin \theta \tan \delta_0 + 2 \sin^2 \frac{\theta}{2} \cos \alpha = l'_0 + \Delta l'$.

8. A satellite revolves in a circle (radius b) about a primary which revolves about a fixed centre in a circle (radius a), the angular velocity of the satellite being m times that of the primary; show that the satellite as seen from the fixed centre will have a certain part of its path convex, and its motion therein retrograde if $a > b$ and $< mb$.

Assuming the orbits of the earth around the sun and of the moon around the earth to be circular, show that the moon's path is everywhere concave towards the sun.

9. How will you proceed to derive the 'normal equations' from n observations, the equation being of the form

$$a_1 x + b_1 y + c_1 z - l_1 = v_1 [r = 1, 2, \dots, n]$$

From the equations

$$\begin{array}{rrrrr} + x & - y & + 2z & = & 3 \\ + 3x & + 2y & - z & = & 5 \\ + 4x & + y & + 4z & = & 21 \\ - x & + 3y & + 3z & = & 14 \end{array}$$

derive the normal equations and determine the most probable values and also the weights of the unknown.

10. Prove that for a star which rises to the north of east, the rate at which the azimuth changes is the same when it rises as when it is due east, and is a minimum when the azimuth is

$$\sin^{-1} \left(\tan \lambda \sin \frac{a}{2} \sqrt{\cos \alpha} \right)$$

north of east, where λ is the latitude and α the altitude of the star when due east.

(Advanced Astronomy—Second Paper.)**EIGHTH PAPER***The questions are of equal value.***First Half.***Examiner* DR. NRIPENDRANATH SEN, D.Sc.*Only THREE questions are to be attempted.*

1. Find the equation of the outline of a planet as projected on the celestial sphere.

Proceed to find the apparent curve of illumination of a planet's surface as seen from the Earth.

2. Discuss the method of determining time by equal altitudes (*a*) of a star, (*b*) of the sun.

If two stars rise simultaneously in azimuths which are supplementary, shew that one is as long above the horizon as the other below it; and if $2x$ be the difference of their azimuths and $2y$ hours the difference between their times of setting, shew that the latitude ϕ of the given by

$$\sin \phi = \cot x \tan (7\frac{1}{2}y^\circ).$$

3. Explain clearly, with full mathematical details, how observations of the beginning and ending of a transit of Venus from two stations on the Earth can be utilized to determine the distance of the sun from the earth.

4. Describe clearly the motions of the equator and the ecliptic due to lunisolar and planetary precession. Deduce expressions for the instantaneous *rates* of motion in (i) general precession in Longitude, (ii) general precession in R.A., and (iii) obliquity of the ecliptic.

Find the effects of combined lunisolar and planetary precession on the celestial latitude and longitude of a star.

5. What is meant by the term 'Equation of the centre'? Prove that the greatest equation of the centre is approximately

$$2e + \frac{11e^3}{4},$$

e being eccentricity of Earth's orbit.

Second Half.*Examiner*—DR. BRATISANKAR RAY, M.Sc., Ph.D.*Only THREE questions are to be attempted.*

6. Write a short note on the apparent and absolute magnitudes of stars and deduce a relation between the two magnitudes.

It is most likely that the stars are finite in number. Can you justify this statement?

(Assume that the stars are uniformly distributed and they have all equal brightness.)

7. Describe different methods of determining parallax of stars. Explain whether the methods are all based on definite physical laws.

8. Prove that according to Eddington's hypothesis in the theory of radiative equilibrium, the relationship between pressure, temperature, and density in the interior of a spherical star, is given by

$$P = \frac{\text{const.}}{\beta} - \rho T = \frac{1}{3} \frac{a}{1-\beta} T^4 \quad (a \rightarrow \delta \text{ Stefans const.})$$

where P , ρ , T are pressure, density, and temperature respectively and β is a const. which you are to define.

9. (a) What are the theories of the origin of a double star? Write a short note on the fission theory.

(b) What will be the form of the primary when the secondary is a rigid sphere? Give a mathematical justification of your statement.

10. Discuss the (Dynamical) Tidal Problem when the maximum possible value (of the statical problem) $1255\pi^{\frac{1}{2}}$ of ' μ ' is passed, and prove that

$$-\frac{d^2(b-c)}{dt^2} = -(b-c) \times \text{positive quantity,}$$

which shows that any inequality in b and c gives rise to oscillations about the value $b-c=0$; (a , b , c being the three axes of the ellipsoid of the problem.)

(Geodesy and Geophysics—First Paper.)

SEVENTH PAPER

Examiners — $\left\{ \begin{array}{l} \text{DR. SUDHADHAN GHOSH, D.Sc.} \\ \text{PROF. NIKHILRANJAN SEN, D.Sc., Ph.D.} \end{array} \right.$

Not more than SIX questions are to be answered, of which Question 2 must be one.

1. Assuming the earth to be a spheroid, show that the length of an arc of the meridian ellipse between two stations whose latitudes are ϕ_1 and ϕ_2 , is given by the formula

$$s = a \left(1 - \frac{1}{4}e^2 \right) (\phi_2 - \phi_1) - \frac{3}{4}ae^2 \sin(\phi_2 - \phi_1) \cos(\phi_2 + \phi_1).$$

The lengths in feet of a degree on the meridian at latitudes 0° and 45° are 365542 and 364609 respectively. Find the length of a degree on the meridian at latitude 30° .

2. Four observations of equal weights give the following equations:—

$$\begin{aligned}x + 2y - z &= 5 \\ 2x - y + 3z &= 11 \\ -x + 5y + 6z &= 13 \\ 3x + y + 2z &= 16.\end{aligned}$$

Find the best values of the quantities x , y , z .

3. What is a conical projection, in map-making? Describe with theory, the three types of simple conical projection.

4. What do you understand by 'the distance between two points on the earth's surface'?

P and Q are two points on the earth's surface and s is the length of the arc between them, of the section of the earth's surface by the vertical plane at P , passing through Q and A is the angle which this plane makes with the vertical plane at P passing through a principal tangent to the earth's surface at P . If σ , α be the geodetic polar co-ordinates of Q referred to P as pole and the geodetic line along the principal tangent as the initial line, shew that

$$A - \alpha = \frac{e^2 \sigma^2}{12a^2} \cos^3 \phi \sin 2A$$

$$\text{and} \quad s - \sigma = \frac{e^4 \sigma^4}{360a^4} \cos^4 \phi \sin^2 2A$$

where ϕ is the latitude of P , a the mean radius, and e the eccentricity of the earth.

5. Prove that the difference in latitudes between two stations on the earth's surface is given by

$$-\Delta\phi'' = \frac{s \cos \alpha}{R_M \text{ arc } 1''} + \frac{s^2 \sin^2 \alpha \tan \phi}{2NR_M \text{ arc } 1''} - \frac{s^3 \sin^2 \alpha \cos \alpha (1 + 3 \tan^2 \phi)}{6N^2 R_M \text{ arc } 1''},$$

where s is the linear distance between the stations, α the azimuth, R_M the radius of curvature of the meridian at the middle point between the parallels, and N the radius of the sphere touching the earth along the line joining the stations.

6. Give a short account of the theory of Eötvös torsion balance. How will you calculate the curvature of the vertical line with the help of Eötvös balance?

7. Prove Clairaut's theorem

$$q = q_0 \left\{ 1 + \left(\frac{5}{2} m - e \right) \sin^2 \phi \right\}$$

How is the figure of the earth determined from it?

8. Shew that the difference of level between two stations measured trigonometrically, is given by

$$H_2 - H_1 + N_2 - N_1 = s_m \left(1 + \frac{s_0^2}{12\rho^2} \right) \cot \left(s_{12} - \frac{\gamma}{2} \right),$$

where

$$s_m = s_0 \left(1 + \frac{H_1 + H_2 + N_1 + N_2}{2\rho} \right)$$

and H_1, H_2 are the heights of the two stations above the sea-level, N_1, N_2 the distances between the geoid and the reference ellipsoid under the stations, s , the linear distance between the stations measured on the reference ellipsoid, γ the angle subtended at the centre of the earth by s , ρ the mean radius of curvature of the earth for the region, and $\zeta_{1,2}$ the zenith distances of the second station from the first.

v) State and prove Legendre's theorem by which a spherical triangle can be solved with the help of an auxiliary plane triangle.

(Geodesy and Geophysics—Second Paper.)

EIGHTH PAPER

Examiners— $\left\{ \begin{array}{l} \text{DR. SUDHADHAN GHOSH, D.Sc} \\ \text{DR. SITESCHANDRA KAR, M.A., Ph.D.} \end{array} \right.$

The questions are of equal value.

Not more than six questions are to be answered.

1. Obtain Clairaut's differential equation for the ellipticity of the earth's strata of equal density in the form

$$\frac{d^2\epsilon}{dr^2} + \frac{6\rho r^2}{S(r)} \frac{d\epsilon}{dr} - \left(1 - \frac{\rho r^4}{S(r)}\right) \frac{\epsilon}{r^4} = 0.$$

2. Obtain Radau's transformation of Clairaut's differential equation. Give Darwin's investigation of the moment of inertia of the earth.

3. Describe with theories, Airy's mine experiment and Cavendish's experiment for the determination of the mean density of the earth. State the disadvantages of the methods, if any.

4. Discuss the tidal oscillations in a canal coincident with the meridian, when the moon's orbit is assumed to be circular and in the plane of the earth's equator.

Consider also the case when the moon has a declination δ .

5. A tidal river communicates with the sea at one end. Discuss the forced oscillations of water in the river due to the tides in the sea.

6. What are Love waves?

A heterogeneous medium consists of a layer of thickness T , density ρ , and rigidity μ placed on a layer of infinite thickness, density ρ' and rigidity μ' . Obtain the equation for the velocity of Love waves in the medium. Show that for Love waves to exist in such a medium, its velocity must be greater than the velocity of transverse waves in the upper layer and less than the velocity of transverse waves in the lower layer.

7. Shew that the differential equation of the path of a seismic ray inside the earth, is

$$d\theta = \frac{\alpha \rho}{p \sqrt{\phi^2 \rho^2 - \alpha^2}}$$

where

$$\rho = \frac{r}{r_0}, \quad \phi(\rho) = v\rho,$$

r_0 the radius of the earth, v the ratio of the refractive indices of the layers of radii r , r_0 , and α a constant.

What are time curves? How are they prepared?

8. Describe the methods of determining the rigidity of the earth.

(Advanced Dynamics—First Paper.)

SEVENTH PAPER

$$\text{Examiners—} \begin{cases} \text{Dr. P. DAS, D.Sc.} \\ \text{Dr. S. GHOSH, D.Sc.} \end{cases}$$

Not more than six questions are to be answered.

1. Investigate Poinso't's kinematical representation of the motion of a rigid body moving about a fixed point under no external forces.

If $2T$ be the vis viva, G the resultant angular momentum, and B the mean principal moment of inertia of a rigid body moving about a fixed point under no external forces, discuss the motion when $G^2 = 2BT$.

2. Solve completely the equations of motion of a symmetrical top on a rough horizontal plane, when $A = B - 2C$ and the C.G. of the top lies in the plane of equal moments.

3. A small bead slides on a smooth circular ring of radius a , which is made to revolve round a vertical axis passing through its centre with uniform angular velocity ω , the plane of the ring being inclined at a constant angle α to the horizontal plane. If θ be the vectorial angle of the bead measured from the line of the plane of the ring and the horizon, then show that

$$\ddot{\theta} - \omega^2 \sin^2 \alpha \sin \theta \cos \theta = - \frac{g \cos \theta \sin \alpha}{a}.$$

4. A thin uniform circular disc of radius a rolls on a perfectly rough horizontal table. The inclination of its plane to that of the table being denoted by θ , the azimuth of the radius to the point of contact by ψ , and the angular velocity about its axis by ω , obtain the following equations of motion.

$$2\omega\dot{\theta} - \sin \theta \ddot{\psi} - 2 \cos \theta \dot{\theta} \dot{\psi} = 0.$$

$$5\ddot{\theta} - \sin \theta \cos \theta \dot{\psi}^2 + 6\omega \sin \theta \dot{\psi} = - \frac{4g}{a} \cos \theta,$$

$$3\dot{\omega} = 2 \sin \theta \dot{\theta} \dot{\psi}.$$

5. A heavy homogeneous sphere is set in motion in any manner on an imperfectly rough plane inclined at an angle α to the horizon. If μ be the coefficient of friction, discuss the subsequent motion and show that the direction of sliding continually approaches the line of greatest slope and coincides with it after a finite time if $\mu > \frac{1}{2} \tan \alpha$, when sliding ceases; and if $\mu < \frac{1}{2} \tan \alpha$, sliding never ceases and the direction of sliding coincides with the line of greatest slope only after infinite time.

6. Derive the frequency equation for the small oscillations of two equal pendulums suspended from the extremities of weightless rod pivoted at the centre, the motion being in the same vertical plane through the rod. Shew that if they vibrate either in the same phase or in opposite phase, the system degenerates into one with a single frequency.

7. Investigate the effect of introducing a constraint on the periods of vibration of a conservative holonomous dynamical system.

Two independent systems whose principal co-ordinates are θ, ϕ and ξ, μ , vibrate in different periods. If they are connected by introducing a geometrical relation represented by

$$a\theta + b\phi - a\xi + \beta\eta = 0,$$

show that the periods of the connected system are given by

$$\frac{a^2}{p^2 - p_1^2} + \frac{b^2}{p^2 - p_2^2} + \frac{a^2}{p^2 - p_3^2} + \frac{\beta^2}{p^2 - p_4^2} = 0$$

where $(p_1, p_2), (p_3, p_4)$ are the values of p for the two disconnected system.

8. Apply Hamilton's variation principle to obtain the equations of transverse vibration of a light uniform string stretched between two fixed points. If one point of the string is pulled aside and let go, find the subsequent vibration of the string.

9. Three strings AB, BC, CD of different materials are attached to one another at B, C and stretched between two fixed points A and D . If they vibrate transversely, and if a_1, a_2, a_3 , be the velocities of a wave along them, prove that the periods p are given by

$$\frac{\tan n_1 l_1}{n_1} + \frac{\tan n_2 l_2}{n_2} + \frac{\tan n_3 l_3}{n_3} = n_2^2 \cdot \frac{\tan n_1 l_1}{n_1} + \frac{\tan n_2 l_2}{n_2} + \frac{\tan n_3 l_3}{n_3},$$

where

$$n_1 a_1 = n_2 a_2 = n_3 a_3 = p$$

10. Obtain the equation of flexural vibrations of a straight bar and show that when both ends are free, the frequency equation can be written in the form

$$\cos m \cosh m = 1.$$

(Advanced Dynamics—Second Paper.)

EIGHTH PAPER

$$\text{Examiners-} \quad \left\{ \begin{array}{l} \text{DR. P. DAS, D.Sc.} \\ \text{DR. S. GHOSH, D.Sc.} \end{array} \right.$$

The questions are of equal value.

Not more than six questions are to be answered.

1. If the kinetic potential of a system be

$$T = \frac{1}{2} a \dot{q}_1^2 + \frac{1}{2} \dot{q}_2^2 - c - e q_2^2,$$

show that the modified potential for the new system obtained by ignoring the cyclic co-ordinate is

$$R = \frac{1}{2} q_2^2 - c - e q_2^2 - \frac{1}{2} \beta^2 (a + b q_1^2).$$

Also interpret the quantity β .

2. What is Hamilton's principal function W ? Show that for a conservative system $W = S - Et$, where S is the action function and E the total energy. Construct W for the simple harmonic oscillator.

3. The Hamiltonian of a particle in a central field V in terms of the cartesian co-ordinates q_1, q_2 is

$$H = \frac{1}{2m} (p_1^2 + p_2^2) - V(\sqrt{q_1^2 + q_2^2})$$

If we pass from q_1, q_2 to a new set of co-ordinates Q_1, Q_2 and momenta P_1, P_2 by means of the contact transformation

$$q_k = \frac{\partial F}{\partial p_k}, \quad P_k = \frac{\partial F}{\partial Q_k}$$

where

$$F = p_1 Q_1 \cos Q_2 + p_2 Q_1 \sin Q_2,$$

then show that the new Hamiltonian is

$$\frac{1}{2m} \left(P_1^2 + \frac{P_2^2}{Q_1^2} \right) - V(Q_1).$$

Also interpret the quantities Q_1, P_2 .

4. What is Hamilton's partial differential equation of motion? Write it down for a particle falling freely from rest under gravity and solve it by Jacobi's method.

5. State and prove Hertz's principle of least curvature.

If T and V denote respectively the kinetic and potential energies of a dynamical system, shew that

$$2 \frac{d^2 V}{dt^2} + \Sigma m (\ddot{x}^2 + \ddot{y}^2 + \ddot{z}^2)$$

differs from

$$\Sigma \frac{1}{m} \left\{ \left(m \ddot{x} + \frac{\partial V}{\partial x} \right)^2 + \left(m \ddot{y} + \frac{\partial V}{\partial y} \right)^2 + \left(m \ddot{z} + \frac{\partial V}{\partial z} \right)^2 \right\}$$

by a quantity which does not involve the acceleration; and hence that

$$\frac{d^2 T}{dt^2} + \frac{1}{2} \sum m (\ddot{x}^2 + \ddot{y}^2 + \ddot{z}^2)$$

is a maximum when the accelerations have the values corresponding to the actual motion, as compared with all motions which are consistent with the constraints and satisfy the same integral of energy, and which have the same values of the co-ordinates and velocities at the instant considered.

6. Define an Integral Invariant.

Shew that

$$\iint \dots \dots \int \delta q_1 \dots \delta q_n \delta p_1 \dots \delta p_n$$

is an integral invariant of the Hamiltonian system of equations of motion of a dynamical system

7. What is a Last Multiplier of a system of differential equations? Obtain the equation it satisfies. Shew that the quotient of two last multipliers of a system of differential equations is an integral of the system.

8. What is a contact transformation?

Determine the relations between the two sets of variables in an infinitesimal contact transformation. Show that the transformation from the values of the co-ordinates and the momenta at time t to their values at time $t+dt$ is an infinitesimal contact transformation.

9. Prove Poisson's identity

$$((f, \phi), \psi) + ((\phi, \psi), f) + ((\psi, f), \phi) = 0.$$

Hence or otherwise prove Poisson's theorem on the derivation of a new integral from two known integrals of a dynamical system.

$$q_r = q_r(t, \alpha_1, \dots, \alpha_n, \beta_1, \dots, \beta_n),$$

$$p_r = p_r(t, \alpha_1, \dots, \alpha_n, \beta_1, \dots, \beta_n),$$

be the solutions of the Hamiltonian equations of motion of a dynamical system whose Hamiltonian function is H , $\alpha_1, \dots, \alpha_n, \beta_1, \dots, \beta_n$ being the canonical constants of integration, shew that the same expressions for q_r, p_r give us the solutions of the Hamiltonian equations of motion of another dynamical system whose Hamiltonian function is $H + \Omega$, provided that the α 's and β 's are no longer constants, but satisfy the equations

$$\frac{d\beta_r}{dt} = \frac{\partial \Omega}{\partial \alpha_r}, \quad \frac{d\alpha_r}{dt} = -\frac{\partial \Omega}{\partial \beta_r}.$$

(Electricity and Magnetism—First Paper.)**SEVENTH PAPER***The questions are of equal value.**Answer SIX questions, not more than THREE from each half.***First Half***Examiner—DR. SITESCHANDRA KAR, M.A., PH.D.*

1. Two spherical shells of conducting matter are so placed as to be concentric. With the outer shell charged they are insulated from each other. Contact is now made between them and then broken, and then the outer shell is discharged. No charge is now traceable in the inner shell. Base upon this fact a proof of the law of inverse squares of electrostatics.

2. An uncharged spherical conductor is brought into a homogenous electric field. Find the modified field.

Explain how under certain assumptions, the law,

$$\frac{1}{\rho} \frac{\epsilon - 1}{\epsilon + 2} = \text{constant},$$

may be established for an isotropic dielectric, where $\epsilon =$ the dielectric constant, $\rho =$ the material density.

3. Define 'Intensity of Magnetization', and 'Magnetic Induction'.

Find an expression for the magnetic potential of a magnetized body and explain how this is related to Maxwell's field-equations.

Sketch Gauss's method of analysis of the terrestrial magnetic field.

4. Find the equations of wave-motion in a semi-conductor.

Establish under certain assumptions the formula of Hagen and Rubens relating to metallic reflection.

5. State Maxwell's equations for stationary currents, and deduce the laws of Biot-Savart. Compare the type of magnetic field associated with a current with that associated with magnetized body.

Give the expression for the energy, show that the total force exerted on matter carrying a current is given by

$$\frac{1}{c} \left[\vec{v} \times \vec{B} \right] = \frac{H^2}{8\pi} \cdot \vec{\Delta} \mu, \text{ per unit-volume.}$$

Second Half.*Examiner—PROF. S. N. BOSE, M.Sc.*

6. Explain the application of the method of images in electrostatic problems.

A point-charge ' e ' brought near a spherical conductor of radius ' a ', having a charge ' E '. Show that the particle will be repelled by the sphere unless its distance from the nearest point of its surface is less than

$$\frac{1}{2} a \sqrt{\frac{e}{E}}$$

approximately.

Calculate also the distribution of the charge on the sphere when the particle is at a distance ' $2a$ ' from the centre of the sphere.

7. Enunciate the laws governing the distribution of currents in a net-work of linear conductors, with suitable sources of E.M.F. in the different branches.

In the wheatstone-bridge arrangement, r_1, r_2, r_3, r_4 are the resistances of the four arms, AB, BC, AD, DC . B and D are connected through a galvanometer of resistance ' r_g '. The points A and C are similarly connected and includes a source of E.M.F. and has a total resistance ' R '.

Calculate the current through the galvanometer. When will the current through the galvanometer be minimum?

8. Define the c.g.s. electrostatic and electromagnetic units of electricity. Show that the ratio has the dimension of a velocity.

Describe any method of determining the ratio experimentally with suitable explanations.

9. Express the electric and magnetic forces in an electromagnetic field in terms of the Scalar and Vector potentials.

Deduce the differential equations which these quantities satisfy. If P satisfies the equation

$$\frac{d^4 P}{dt^4} - c^2 \nabla^2 P = 0$$

Show that

$$\phi = -\frac{\partial P}{\partial x}, \quad a_x = \frac{1}{c} \frac{\partial P}{\partial t}, \quad a_y = 0, \quad a_z = 0$$

will represent an electromagnetic field. Hence discuss the nature of the field for large values of ' r ' when

$$P = \frac{A}{r} \cos p \left(t - \frac{r}{c} \right).$$

10. Discuss the reflection and refraction of a plane-polarized electromagnetic wave-train on the boundary of two dielectrics, when the electric Vector is in the plane of incidence. Calculate the intensity of the reflected beam at normal incidence.

(Electricity and Magnetism—Second Paper)**EIGHTH PAPER**

Examiners— $\left\{ \begin{array}{l} \text{Mr. S. GUPTA, M.Sc.} \\ \text{Dr. SITESCHANDRA KAR, M.A., Ph.D.} \end{array} \right.$

The questions are of equal value.

Try SIX questions only.

1. Given Maxwell's equations, prove that in free space the scalar potential ϕ and the vector potential \vec{A} satisfy the equations

$$\nabla^2 \phi - \frac{\partial^2 \phi}{c^2 \partial t^2} = -4\pi r^2 \rho,$$

$$\nabla^2 \vec{A} - \frac{\partial^2 \vec{A}}{c^2 \partial t^2} = -4\pi \vec{j},$$

the units being E.M.U. throughout.

For a distribution of charge and current confined to a bounded region, establish the formulae

$$\phi = \int \frac{c^2 |\rho|}{r} d\tau, \quad \vec{A} = \int \frac{|\vec{j}|}{r} d\tau$$

for the retarded potentials at any point, the contributions to ϕ and \vec{A} at any point by the boundary at infinity being assumed to vanish.

2. Prove that the Lorentz-force,

$$\vec{K} + \frac{1}{c} \left[\vec{v} \times \vec{H} \right]$$

per unit charge leads with use of the field-equations directly to the propositions of the conservation of energy and momentum for matter and field.

3. Find the expressions for the electromagnetic potentials for a point-charge moving in any manner.

Show how on the assumption of a uniform velocity these potentials may be obtained by a Lorentz-transformation.

4. Deduce

$$m_l = \frac{\partial |G|}{\partial |v|}, \quad m_t = \frac{|G|}{|v|},$$

where G is the electromagnetic impulse, v the velocity of the electron, and m_l , m_t are longitudinal and transversal masses. What is the definition of inertial mass upon which this distinction is founded? Is any other definition possible?

Work out the theory of the experiments which determine the specific charge and the velocity of the cathode electron.

5. Given for the Lorentz-electron

$$L = -\frac{e^2}{2a} \sqrt{1 - \frac{v^2}{c^2}},$$

$$G = \frac{2e^2}{3ac^2} \cdot \frac{\vec{v}}{\sqrt{1 - \frac{v^2}{c^2}}},$$

where L is the Lagrange-function and G the electromagnetic impulse, prove that the principle of energy cannot be upheld on the assumption of a purely electromagnetic origin of inertia.

Compare the behaviour of the electromagnetic mass of this electron with that of material mass in the theory of relativity.

6. For a magneton prove that the mean magnetic moment has an expression of the form

$$\vec{m} = \frac{1}{2c} \sum_i e_i \left[\vec{s}_i \times \vec{r}_i \right].$$

Show further that this expression is also valid when charges of the same sign are distributed uniformly on the surface of a small sphere rotating about a central axis and that the value of this moment is then

$$\frac{ea^2}{3c} \vec{\omega},$$

where e is the total charge, a the radius, and $\vec{\omega}$ the angular velocity.

7. Define a world-point. Give a description of Minkowski's geometrical representation of the partition of the four-dimensional space-time continuum. Explain the distinction between spatial and temporal vectors.

8. Show that the effect of a uniform magnetic field on the motion of an electron under any forces is the same, to a first approximation, as if the magnetic field were absent and the whole system had a uniform rotation about an axis parallel to the direction of the field.

Give a mathematical treatment of the normal Zeeman effect from the standpoint of the Lorentz theory and explain the experimental results with special stress on the polarization of the different components.

9. A system $S'(x', y', z', t')$ is moving relatively to a system $S(x, y, z, t)$ with uniform velocity v along the x -axis and coincides with S at $t=0$. Deduce from the standpoint of the special relativity theory the relations between the co-ordinates of the two systems.

If H_1, H_2, H_3 and E_1, E_2, E_3 are the components of an electromagnetic field relative to S_1 show that the components relative to S' are given by

$$H_1' = H_1, H_2' = \beta \left(H_2 + \frac{v}{c} E_3 \right), H_3' = \beta \left(H_3 - \frac{v}{c} E_2 \right),$$

$$E_1' = E_1, E_2' = \beta \left(E_2 - \frac{v}{c} H_3 \right), E_3' = \beta \left(E_3 + \frac{v}{c} H_2 \right),$$

where

$$\beta = \frac{1}{\sqrt{1 - \frac{v^2}{c^2}}}$$

Hence verify that (H, E) and $(H^2 - E^2)$ are invariants with respect to a Lorentz-transformation.

10. State Minkowski's material equations.

A medium of refractive index n is moving in the direction of the x -axis with a uniform velocity v . Show that, to a first approximation, the equation of wave-propagation takes the form

$$\nabla^2 \vec{E} - 2(n^2 - 1) \frac{v}{c^2} \frac{\partial^2 \vec{E}}{\partial x \partial t} - \frac{n^2}{c^2} \frac{\partial^2 \vec{E}}{\partial t^2} = 0.$$

and hence find Fresnel's convection coefficient.

(Tides and Surface Waves –First Paper.)

SEVENTH PAPER

The questions are of equal value.

First Half

Examiner—DR. N. N. SEN, D.Sc.

Only THREE questions may be attempted.

1. Analyse the tide-generating effect of the sun and the moon on the Earth into the partial tides and discuss their chief characteristics. What is the anti-moon?

2. Obtain the equation of motion of a train of long waves, explaining the significance of the assumptions made.

An one-dimensional disturbance initially at rest is given by

$$\eta/h = \lambda x(a - x)$$

where η is the elevation and h the uniform depth. If the conditions for long waves be satisfied find the elevation at any instant.

3. Investigate the equation of the tide in an equatorial canal of length $2a$ due to the moon supposed to be moving in the equatorial plane.

Prove that at the middle point of the canal the elevation is

$$-\frac{1}{2} \frac{H}{m^2 - 1} \cos 2nt \left(1 - \frac{m \sin 2a}{\sin 2ma} \right)$$

where $m = na/c$, n being the westward angular velocity of the moon relative a fixed meridian and H has the usual significance.

4. Find the equations determining the tides in a circular basin of variable depth.

If the depth h is given by

$$h = h_0(1 - r^2/a^2)$$

prove that in the symmetric mode, the speed σ is

$$\sigma^2 = 4j(j-1)gh_0/a^2$$

where j is any integer.

5. Investigate the tides on a spherical layer of water entirely covering a solid globe, the attraction of the liquid being taken into account.

Prove that the speed of tide of harmonic order n is given by

$$\sigma^2 = n(n+1) \left(1 - \frac{3}{2n+1} \frac{\rho}{\rho_0} \right) \frac{gh}{a^2}$$

ρ being the density of water, ρ_0 that of the solid globe, a its radius, and h the depth.

Second Half

Examiner--MR. B. M. SEN, M.Sc., (Cal.), M.A. (Cantab).

Answer THREE questions only.

6. Investigate the propagation of a 'bore' along a straight canal of constant depth. Shew that a negative bore of finite height cannot travel unchanged.

7. Obtain Laplace's equations for tidal oscillations of an ocean of small depth h covering a rotating non-elastic globe of small ellipticity in the forms

$$\frac{\partial u}{\partial t} - 2\omega v \cos \theta = -\frac{g}{a} \frac{\partial}{\partial \theta} (\xi - \zeta)$$

$$\frac{\partial v}{\partial t} + 2\omega u \sin \theta = -\frac{g}{a \sin \theta} \frac{\partial}{\partial \phi} (\xi - \zeta)$$

with
$$\frac{\partial \xi}{\partial t} = \frac{-1}{a \sin \theta} \left\{ \frac{\partial}{\partial \theta} (hu \sin \theta) + \frac{\partial}{\partial \phi} (hv) \right\}.$$

Find the conditions for free steady motions.

8. Shew that owing to the viscosity of oceanic water the diurnal motion of the Earth is retarded. Find an expression for the couple of retardation.

9. Assuming equations given in Question 7 above, investigate Laplace's Tidal 'oscillation of the *First* and *Second* species'.

10. How do you explain the fact that the spring tides are in many places highest a day or two after the corresponding Syzygy?

Write a brief note on the stability of the ocean in the case of rotation.

(Tides and Surface Waves—Second Paper.)

EIGHTH PAPER.

The questions are of equal value.

Try SIX questions only, THREE from EACH half.

First Half

Examiner.—MR. A. C. BANERJI, M.A. (Cantab), M.Sc. (Cal.).

1. Investigate the problem of tidal oscillations in a plane horizontal sheet of water having in the undisturbed state a motion of uniform rotation about a vertical axis. Establish, in the case of uniform depth h , the following result for a simple-harmonic disturbance of frequency $\frac{\sigma}{2\pi}$,

$$\frac{\partial^2 \zeta}{\partial x^2} + \frac{\partial^2 \zeta}{\partial y^2} + \frac{\sigma^2 - 4w^2}{gh} \zeta = \frac{\partial^2 \zeta}{\partial x^2} + \frac{\omega^2 \zeta}{\partial y^2}$$

where w is the angular velocity, ζ the vertical displacement at the free surface, the axis of z being vertical. Also

$$\zeta = -\frac{\Omega}{g}$$

where Ω denotes the potential of disturbing forces.

2. Investigate the effect of the disturbance produced in the flow of a uniform stream by a submerged cylindrical obstacle whose radius is small compared with the depth of its axis, the cylinder being placed horizontally athwart the stream.

3. Two liquids, of densities ρ and ρ' , are flowing in parallel streams of velocities U and U' , with their common surface of separation a horizontal plane, the liquids being otherwise unlimited in extent. Shew that the common surface of separation may take the form of regular stationary waves of length

$$2\pi(\rho U^3 + \rho' U'^3) / g(\rho - \rho'),$$

and examine the stability of the motion.

Discuss the similar problem when account is taken of the surface tension between the two liquids.

4. Obtain the effect of a local disturbance of a pressure advancing with constant velocity over the surface of a liquid extending to infinity horizontally and downwards. Explain the main features of the system of waves which accompany a ship moving through deep water.

5. Investigate the effect of a *slight* simple harmonic corrugation in the bed of a stream flowing with a uniform velocity.

If the bottom of a horizontal canal of small depth h be constrained to execute a simple harmonic motion such that the vertical displacement at distance x from a fixed line across the canal and perpendicular to its length at the bottom be given by $a \cos k(x - vt)$, a being small; shew that when the motion is steady, the form of the surface is given by

$$y = h + \frac{av^2}{v^2 - gh} \cos k(x - vt).$$

Second Half.

Examiner—DR. N. N. SEN, D.Sc.

6. Prove that the total energy of a progressive simple harmonic surface wave per wave length is half kinetic and half potential, and that the energy is transmitted at a rate equal to the group velocity.

7. Investigate the problem of Gerstner's Trochoidal Waves. Prove that such waves are rotational, the free surface being a trochoid or a cycloid, and find an expression for the vorticity.

8. Investigate the small oscillation of an ocean of uniform depth $a - b$, covering a symmetrical solid spherical nucleus of radius b . Prove that the speed u_n of the oscillation of harmonic order n is given by

$$u_n = \frac{n(n+1) \left\{ \left(\frac{a}{b}\right)^n - \left(\frac{b}{a}\right)^{n+1} \right\}}{(n+1) \left(\frac{a}{b}\right)^n + n \left(\frac{b}{a}\right)^{n+1}} \left(1 - \frac{3}{2n+1} \frac{\rho}{\rho_0} \right) \frac{g}{a},$$

where ρ = density of the ocean, ρ_0 = mean density of the whole mass.

9. Discuss small oscillations of a drop of liquid about the spherical form under surface tension. Taking 'Superficial Energy' as 74 units per unit area proceed to show that the radius of a drop of water which would vibrate seconds is 2.47 cm. approximately.

10. Investigate the effect of a steady pressure $C \cos kx$ on the surface of a running stream subject to gravitational and capillary forces. Proceed to show that for pressure of integral amount P concentrated on a line of the surface at the origin, the surface elevation η is of the form

$$\frac{\pi T_1}{P} \eta = - \frac{2\pi}{k_2 - k_1} \sin k_1 x + F(x), \text{ when } x > 0.$$

and

$$\frac{\pi T_1}{P} \eta = - \frac{2\pi}{k_2 - k_1} \sin k_2 x + F(x), \text{ when } x < 0.$$

PHYSICS

FIRST PAPER

<i>Examiners</i>	{	PROF. D. M. BOSE, M.A., B.Sc., PH.D., CONVENER. DR. D. N. MALLIK, B.A., Sc.D. MR. D. BANERJEE, M.Sc. DR. D. P. RAYCHAUDHURI, D.Sc.
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The questions are of equal value.

Not more than six questions to be attempted.

1. Investigate the motion of a rigid body, free to rotate about a horizontal axis, subject to gravity and to viscous force proportional to its velocity.

Under the action of an impulsive force the body is displaced from its position of rest. How can the value of the impulse be calculated? Work out the theory of the logarithmic decrement in connection with the motion of the body.

2. Deduce Hamilton's canonical form of the equations of motion of a system of material particles. Use them to determine the motion of a material particle under the action of a force which varies inversely as the square of the distance of the particle from a fixed centre.

3. Derive the condition of equilibrium of a rigid body under the action of any number of forces acting on it. Discuss the nature of a force couple, and show how it can be represented vectorially.

4. Obtain the equations connecting the components of the displacement at a point in an elastic medium with the co-ordinates of the point, and explain the significance of the constants which appear as coefficients in these equations.

5. Discuss how the longitudinal oscillation of a linear distribution of equal point masses leads to its normal modes of vibration.

6. How can you characterize a wave motion from the following stand-points: (i) kinematical, (ii) dynamical, and (iii) physical?

Illustrate with an example of an actual wave motion, and show how the above are related to one another.

7. Obtain an expression for Maxwell's law of distribution of velocities in terms of the well known constants, and state the range of applicability of the law.

8. What is 'mean free path'? Obtain an expression for it, and discuss how its value may be experimentally determined.

9. Describe the following two types of manometers for measuring gas pressure, giving the necessary theoretical details. Discuss their respective advantages:—

(i) Knudsen's manometer ; (ii) Ionization gauge.

10. Answer *any two* of the following:—

(i) What are the fundamental assumptions on which the classical statistical mechanics is based?

(ii) What part does Liouville's theorem play in the development of statistical mechanics?

- (iii) What is the difference between 'mathematical' and 'thermodynamic' probability?
- (iv) Explain the following terms :—
- (a) Microscopic state, (b) Macroscopic state, (c) Statistical equilibrium, and (d) Canonical distribution.
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SECOND PAPER

Examiners— $\left\{ \begin{array}{l} \text{DR. S. DATTA, D.Sc., CONVENER.} \\ \text{MR. J. C. MOOKERJEE, M.A.} \\ \text{MR. D K. MAJUMDAR, M.A.} \end{array} \right.$

The questions are of equal value.

Only six questions are to be attempted.

1. Explain the principle of the radiation method of measuring temperature, and indicate how it has been used in measuring the temperature of the sun.
2. Describe a method of measuring the conductivity of air.
3. Describe carefully how you will proceed to study the expansions of a crystal.
4. Find an expression showing the variation of C_v with volume at constant temperature. Hence discuss the various characteristic equations of a gas in the light of the experimental observations on such variation.
5. Deduce an expression for the depression of the freezing point of a solution with concentration from considerations of the thermodynamic potential of the solution.
6. State Nernst's Heat Theorem, and discuss the validity of the theorem by an illustration. Prove how the theorem enables a complete determination of the equilibrium constant at any temperature.
7. Deduce from Quantum theory Planck's equation for the distribution of energy throughout the spectrum of a black body. How far have the theoretical results been confirmed experimentally?
8. Write a short note on Ultra-microscopes and their application. How can you measure the diameter of ultramicroscopic particles?
9. How would you proceed to study the fine structure of a spectral line? Give a description of the method you would adopt, stating reasons for its advantage over others.
10. What is the pyramidal error of a prism? How can it be measured?

THIRD PAPER

Examiners— { Mr. P. C. MAHALANOBIS, M.A., Convener.
 Mr. S. K. ACHARYYA, M.Sc.
 Dr. B. N. CHAKRABARTI, D.Sc.

The questions are of equal value.

Attempt ANY SIX questions.

1. Investigate the energy of an electrostatic field from the point of view of Maxwell's field theory.

2. Give a general account of the theory of magnetism, with special reference to diamagnetism.

3. Discuss the principle of the minimum generation of heat in a network of conductors.

A length $4a$ of uniform wire is bent into the form of a square, and opposite angular points are joined with straight pieces of the same wire, which are in contact at the point of their intersection. A given current enters at the intersection of the diagonals and leaves at an angular point. Find the resistance in terms of the resistance of one side of the square.

4. Find the dimensions of the capacity of a condenser in electrostatic and electromagnetic units. Calculate the value of a microfarad in electrostatic units.

A condenser of capacity $\frac{1}{2}$ microfarad was charged by connecting it with a cell of e.m.f. 1.08 volts. It was disconnected and discharged through a high resistance R . A Quadrant Electrometer was connected to the terminals of the condenser, and its deflection was originally 185 scale-units which decreased to 156 after 10 seconds. Calculate the value of R , and indicate how you would deduce a working formula for this purpose.

5. Discuss the use of potential functions in specifying an electromagnetic field.

6. A condenser of capacity C is connected by leads of resistance R in parallel circuit with a coil of self-inductance L , the resistance of this coil and its leads being S . The arrangement forms a part of a circuit containing a source of alternating e.m.f. of period $\frac{2\pi}{p}$. Find the conditions that the arrangement may be replaced by a wire without self-induction, and calculate the resistance of the equivalent wire. Deduce necessary formulae for the above calculations.

7. Discuss the flow of energy in the electromagnetic field with comments on the velocity of the flow.

8. Investigate the relative intensity of a reflected beam of electromagnetic waves.

9. Write a detailed note on *any one* of the following subjects:—

- (1) Electrical Units.
- (2) Electrometers.
- (3) Oscillographs.
- (4) Electromagnetic Induction.
- (5) Crystal-optics.

10. Shew that when an electromagnetic wave impinges on the surface of a metal, it only penetrates to a finite depth in the latter, depending on the frequency of the wave and on the conductivity of the metal.

How can this so called 'skin effect' be experimentally demonstrated?

FOURTH PAPER

Examiners— $\left\{ \begin{array}{l} \text{PROF. S. K. MITTRA, D.Sc., Convener} \\ \text{DR. B. N. CHAKRABARTI, D.Sc.} \\ \text{MR. C. C. BHATTACHARYA, M.A.} \\ \text{PROF. S. N. BOSE, M.Sc.} \end{array} \right.$

The questions are of equal value.

Answer ANY SIX questions.

1. Explain the difficulties in Maxwell's theory. How are they met in Lorentz's electron theory?

2. Discuss the nature of the electromagnetic field due to an accelerated electron and at a great distance from it.

Apply your results to discuss the phenomena of classical scattering of X-rays from light-elements.

3. Describe and discuss briefly the experiments which support the existence of de Broglie waves associated with the motion of electrons.

Explain in general terms how the de Broglie waves will explain the existence of non-radiating states in hydrogen as postulated in the Bohr theory of 1913.

4. Briefly discuss the possibility of artificial transmutation of elements, in the light of the recent experimental achievements.

5. What do you mean by an isotope? Describe some experimental method for determining the isotopes of an element.

6. Deduce Rayleigh-Jeans law of black-body radiation. Show how it fails to explain observed facts.

7. Distinguish between elastic collision and inelastic collision of the first and the second kind.

Write short notes on the following collisional processes:—

- (a) Photo-electric effect,
- (b) Compton effect,
- (c) Klein and Rosseland collision,
- (d) Ramsauer effect.

8. Give a brief outline of Heisenberg's quantum mechanics.

Write down Heisenberg's relation, and explain its significance.

9. Discuss the nature of the radiations emitted from a radioactive substance. What are the characteristic constants by which these radiations can be described? Explain the following terms: Radioactive constant λ , average life τ , and half period T' .

For Radium $\lambda = 1.26 \times 10^{-11}/\text{sec.}$; find the values of τ and T' .

FIFTH PAPER.

Group A.

(Theory of Relativity.)

Examiners — { MR. P. C. MAHALANOBIS, M. A., Convener.
 PROF. N. R. SEN, D.Sc., Ph.D.

The questions are of equal value.

Answer EITHER Question 1 OR 8 and FOUR more out of the remaining six questions.

1. Describe an experiment to determine motion relative to ether, and explain how the result of the experiment led to the development of the Theory of Relativity. Do you know of any recent attempt at such determination of relative motion?

2. Explain as clearly as you can Einstein's Postulates of Relativity. Assuming the Lorentz Transformation, deduce how an interval of space and time will be transformed among different inertial systems (systems moving with uniform velocities relative to one another). Deduce Einstein's Addition Theorem of velocities, and mention any successful application of this theorem to explaining experimental results.

3. Show how you would rewrite the Lorentz force in an invariant form (as components of a four-vector four-force). What is the fourth component of this four-force? Work out a theory of the variability of mass with velocity. Show that it is possible to dispense with the notion of two masses—longitudinal and transverse—of the older electron theory.

4. Describe, as fully as you can, these cases where contact has been established between the General Theory of Relativity and experience. How far has the application of the General Theory been a success in these cases?

5. Obtain the expression for the Riemann Christoffel tensor R_{ijkl} with four indices. Write down the symmetric properties of this tensor. What does the vanishing of this tensor imply?

6. Write down the gravitational field of a single uncharged particle. Find an interpretation for the constant occurring therein. Compare the behaviour of two clocks placed at two different points on the same radial line from the particle.

7. Give an account of Weyl's attempt at building up a unitary theory of gravitation and electricity. What is the relation of the theory to experience?

8. Write notes on *any two* of the following topics:

- (a) Principles of energy and momentum in the Theory of Relativity.
 - (b) Einstein's and de Sitter's Theory of the Universe.
 - (c) Simultaneity of two events from the view point of relativity.
 - (d) Riemannian Space.
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Group B.

(Spectroscopy.)

Examiners— { DR. S. DATTA, D.Sc., Convener.
 PROF. M. N. SAHA, D.Sc., F.R.S.

The questions are of equal value.

Answer ANY SIX questions.

1. Describe an interference spectrometer of any type, and deduce an expression for its resolving power.
2. Give an account of the work on the fine-structure of the *H α* -line of hydrogen, and describe how the results have been explained on the theory of the rotating electron.
3. What is Lande's *g*-factor? How can you deduce it theoretically, and under what conditions does the deduction hold good?
4. Explain how the nature of the spectrum of an atom or ion is conditioned by the electron structure of the atom, and illustrate your answer with reference to the emission spectrum of Nitrogen.
5. What is hyperfine structure of spectral lines? How are they explained, and what light do they throw on the constitution of the nucleus?
6. Explain what is meant by the term 'Predissociation'. Write a short account of the phenomenon, and discuss its importance.
7. What is meant by the life of atoms? Describe an experiment for determining the life of an atom in a metastable state.
8. Explain the normal Zeeman effect in terms of the quantum theory.
 How far do the actual results agree with theoretical prediction?
9. Discuss the theory of the Isotope Effect in Band Spectra. Briefly describe the experimental arrangement necessary for its study.
10. Discuss the Ornstein and Burger's rule about the intensity-ratios of the various components of a multiplet.
 Give a short account of the experimental procedure by which the rule has been verified.

Group C.

(Electrical Oscillations and Wireless.)

Examiners— { PROF. S. K. MITRA, D.Sc., Convener.
 MR. S. R. KANTEBET, M.I.R.E.

Only FIVE questions are to be attempted.

1. Discuss the nature of discharge of a condenser into a circuit having inductance and resistance, and find the condition to be satisfied for the discharge to be oscillatory. Express the periodicity of the discharge in terms of the circuit constants.

2. Describe in detail the experimental method of determining the field strength of a distant wireless transmitting station.

3. (a) Find an expression for the amplification of one stage triode amplifier having an external impedance in the anode circuit.

(b) A 3 stage resistance-capacity coupled amplifier has the following constants:—

Valve impedance	...	10,000
Valve amplification	...	15
External resistance	...	80,000 ohm.
Loss in coupling condenser	5%.	

Find the voltage across the last output resistance for an input of 3,000 microvolts.

4. Discuss the advantages and disadvantages of choke and grid modulation in telephony.

5. Deduce the condition for the maintenance of electrical oscillations in an L. C. R. circuit with the aid of a triode valve.

Draw vector diagram showing the phase relations of the currents and voltages in the various branches of the circuit.

6. What do you mean by the log. decrement of a circuit? How would you measure it experimentally?

A circuit has a decrement of .0023. After how many oscillations would the amplitude fall to 1% of its initial value?

7. Explain the use of a frame aerial in a direction finding system. How is the 180° ambiguity eliminated?

What is meant by 'vertical effect'?

8. What do you understand by modulation in radio telephony? Describe an experimental arrangement of determining the same of a distant station.

9. Describe in detail a method of determining the height of the Heaviside layer.

Group D.

(X-Ray and Crystal Structure.)

Examiners— { PROF. D. M. BOSE, M.A., B.S., PH.D., Convener
DR. S. R. KHASTGIR, D.Sc.
DR. D. P. RAYCHAUDHURI, D.Sc.

Not more than FIVE questions to be attempted.

The questions are all of equal value.

1. You are supplied with suitable condensers and kenotrons. Give sketches of connections to produce (a) half wave rectification, and (b) full wave rectification, for an alternating high e.m.f.

Calculate the capacity of a condenser necessary to keep the voltage at the terminals of an X-ray tube constant to within 1%, the following data being given :—

Peak voltage of transformer—20 K.V.

Current drawn—10 milliamps.

Frequency of alternating primary current—50.

2. Give a careful account of the use of plane and concave gratings in X-ray spectroscopy, and state some of the principal results obtained with them.

What are the relative advantages and disadvantages of a crystal and a grating for wavelength measurements?

3. What are non-diagram lines? Discuss some of the hypotheses proposed for explaining them.

4. Give an account of the different methods for evaluating the inner energy levels of an atom.

5. State the selection rules in X-ray emission spectra. Mention any violations you know.

Draw an energy level diagram for Xe (atomic number 54), using the latest notations and the $n l j$ values for the levels. On this diagram mark all possible transitions from the L -levels.

6. Obtain an expression for the coefficient of scattering per electron for X-rays from the classical electron theory. How far does it agree with experiment? State what you know of any improvements on Thomson's theory of scattering.

7. Give an account of the different methods by which the structure of a cubic crystal may be determined.

8. Write short notes on *any two* of the following :—

- (i) Normal and anomalous dispersion in X-ray region.
- (ii) Primary and secondary absorption edges.
- (iii) Moseley diagrams (unmodified and modified) and their relation to electronic structure.
- (iv) Intensity relation between the components of an X-ray doublet.

Group E

(Dispersion and Scattering of Light.)

Examiners— { MR. S. K. ACHARYYA, M.Sc., Convener
PROF. K. S. KRISHNAN, D.Sc.

Answer ANY FIVE questions.

1. Investigate theoretically how the refractive index of a medium varies with the frequency of the incident light.

Describe an experimental arrangement for studying the variation in the neighbourhood of the natural frequencies of the medium.

2. Deduce an expression for the double-refraction exhibited by a gas when it is placed in a large, uniform electric field.

Sketch an experimental arrangement for observing the double-refraction.

3. Give an account of Rayleigh's theory of the blue colour of the sky.

Explain how from measurements on the transparency of the atmosphere it is possible to determine the Avogadro number.

4. Outline a theory of light-scattering by a binary liquid mixture. Discuss the theoretical results with particular reference to the optical behaviour of the mixture near the 'critical solution point'.

5. Give an account of Compton's theory of scattering of X-rays by 'free' electrons. How have the various deductions from the theory been verified?

6. Explain the origin of the Stokes and the anti-Stokes lines in Raman scattering. Obtain an expression for their relative intensities. How would you verify the expression experimentally?

7. Give a short account of the Raman spectrum of hydrogen gas, and discuss it with special reference to the existence of the ortho- and para- types of hydrogen molecules.

What changes would you expect in the Raman spectrum if all the hydrogen molecules in the gas are of the heavy kind, namely of mass 4?

8. Write an essay on resonance radiation, and discuss its relation to the Raman and fluorescent radiations.

APPLIED PHYSICS.

FIRST PAPER.

The figures in the margin indicate full marks.

Only THREE questions to be attempted from EACH half.

First Half

Examiners— { Mr. S. K. ACHARYYA, M.Sc.
Mr. P. C. MAHANTI, M.Sc.

1. Discuss the factors which have led to the designing of the present type of movable magnet galvanometers of high sensitivity. 12

A tangent galvanometer consists of two equal circular coils of radius 3 cms. placed on a common axis 8 cms. apart. A steady current sent in opposite directions through the two coils deflects a small needle placed on the axis midway between the two circles through an angle α . Prove that if the earth's horizontal magnetic force is H C.G.S. units, then the strength of the current in C.G.S. units is $\frac{125H}{36\pi}\alpha$. 6

2. Show that in the case of the electrodynamic instruments the deflecting torque is proportional to the rate of change of mutual inductance with deflection and the currents in the fixed and moving coils. 10

What methods are usually adopted to extend the range of an electro-dynamometer wattmeter? 6

3. Write short notes on any two of the following instruments:— 16

- (a) Vibrating reed frequency meter.
- (b) Synchroscope.
- (c) Ampere-hour meter.

1. Find the dimensions of the capacity of a condenser in the two systems of units, and derive any relation between them. 6

Give the theory of an absolute method for determining the capacity of a condenser. 10

5. Find an expression for the mechanical force per unit area of a charged conducting surface. 8

If the radius and tension of a spherical soap-bubble be a and T respectively, show that the charge of electricity required to expand the bubble to twice its linear dimensions would be.

$$4\sqrt{\pi a^3(6T + 7\pi a)},$$

π being the atmospheric pressure.

Second Half

Examiners- { MR. K. P. CHORSEY, A.M.I.E.E., Assoc.,
MR. P. C. MAHANTI, M.Sc. A.I.E.E., A.M.I.E.E.,

1. Deduce a formula for the output coefficient of a D.C. Generator in terms of the electric and magnetic loading from the fundamental equation for the e.m.f. induced in a conductor linking with a magnetic field. 12

A generator has a mean magnetic flux density of 8 kilolines per sq. cm. and an electric loading of 250 amperes-wires per cm. of armature periphery. Calculate the output coefficient of this machine, assuming that the diameter of the armature is 16 cms. and its length 20 cms.

2. What are the effects of counter e.m.f. on the efficiency of D.C. motors. 6

Show that weakening the field of a shunt motor will result in an increase of speed until the back e.m.f. of the armature is equal to the armature resistance drop, after which the speed will diminish. 6

The pressure applied to a D.C. motor having a resistance of 2 ohms is 110 volts. What power is developed by the motor when the back e.m.f. is 75 volts? 4

8. Enumerate the methods used in practice for controlling the speed of D.C. motors, and discuss their application to a shunt motor. 16

4. Describe the Hopkinson test for two identical shunt motors, indicating how the efficiency is obtained.

In such a test on 250 volt machines the line current was 50 amps., and the motor current 400 amps. not including the field current of 6 and 5 amps. The armature resistance of each machine was 0.15 ohm. Calculate the efficiency of such a machine. 8

5. Describe briefly the methods of running series, shunt, and compound would generators in parallel. 16

SECOND PAPER

The questions are of equal value.

Only THREE questions to be attempted from EACH half.

First Half

Examiners— { Mr. J. N. MOOKERJEE, O.B.E.,
Prof. P. N. GHOSH, M.A., Ph.D., Sc.D., F. Inst. P.

1. Deduce the expression for the capacity of a pair of parallel (horizontal) wires, and hence deduce the capacity of a single horizontal wire with respect to earth.

2. Substantiate the statement: 'In a balanced three phase system all the harmonics which are divisible by 3 are absent provided no fourth conductor is used.'

3. Given two coils *A* and *B* connected in parallel with each other across a 60 cycle 115 volt line. Coil *A* having a resistance of 10 ohms and inductance of 0.0133 henry and coil *B* having a resistance of 6 ohms and an inductance of 0.0663 henry.

Calculate—

(a) the current in each of the parallel paths and its power factor;

(b) the resulting line current and its power factor.

4. Three single phase loads, (*A*) 10 K. W. at 0.95 p.f., (*B*) 15 K. W. at 0.93 p.f., (*C*) 20 K. W. at 0.9 p.f., are connected as an unbalanced star connected load to a three phase 4 wire system which is supplied at 400 volts between the outers. To these outers is connected a motor having a balanced input of 18 K. W. at 0.8 p.f.

What is the current in each of the supply mains and what is the power factor of the combined loads?

5. A load of 1,000 K. W. is transmitted at a p.f. of 0.7 and a synchronous condenser running at a leading p.f. 0.15 is then connected up to the circuit to bring the result p.f. to unity. Determine the K.V.A. rating of the synchronous condenser and the power actually consumed by it, and the ratio of the current consumed by the line before and after the insertion of the condenser.

6. A coil having a constant resistance of 4 ohms and an inductive reactance which can be varied between the limits 0 and 9.8 ohms is connected to a sinusoidal supply of 100 volts.

Draw a locus diagram for the current and the impedance when the inductive reactance is varied.

Second Half

Examiners— { Mr. K. P. CHOKSEY, A.M.I.E., Assoc., A.I.E., A.M.I.E.
Prof. P. N. GHOSH, M.A., Ph.D. Sc.D., F. Inst. P.

1. Draw curves of current and power factor for a single phase synchronous motor having variable excitation when supplied at 250 volts and taking a constant power of 5 K.W. The motor has an armature resistance of 0.3 ohms and a synchronous reactance of 1.2 ohms.

2. Calculate the 'all day' efficiency of a single phase 240 K.V.A. 4000/400 volt transformer which supplies a load of 450 amps. at 400 volts for 5 hours a day at a p.f. of 0.75. The full load efficiency is 97.6% and the no load loss 2.2 K.W.

3. Compare the methods of improving the power factor of a big consumer by (a) static condenser, (b) synchronous condenser, (c) phase advancer.

A 2,200 volt 50 cycle three phase motor installed has a full load of 250 K.V.A. at a lagging power factor of 0.6. Calculate the capacity of a static condenser which will raise the power factor to 0.9 at full load, and determine the power factor at 75 per cent. full load, assuming that the load power factor is still 0.6 and the losses in the static condenser are negligible.

4. Explain the principle of the design of starters for A.C. slip ring motors.

A six section starter is required for a 40 H.P. 420 volt slip ring motor having a rotor resistance of 0.7 ohms per phase. In this case the rotor must pass full load current on the first stud but the current peaks must be equal for all other steps. The rotor voltage is 320 and the normal rotor current is 67 amps.

5. Find the values of the conversion ratios current and voltage of a 6 phase rotary converter, and discuss the different methods of starting the machine from the A. C. side.

6. A village covers an area of 10 square miles and you are approached by the authorities to submit a scheme for an electric power station. It is decided that the power generated will be alternating current.

Give your views on the following points:—

- (1) The suitable site for the power station.
- (2) The total load and its distribution.
- (3) The economical method of transmission.

THIRD PAPER

The questions are of equal value.

First Half.

Examiners— $\left\{ \begin{array}{l} \text{MR. P. C. MAHANTI, M.Sc.} \\ \text{MR. S. K. ACHARYYA, M.Sc.} \end{array} \right.$

Only THREE questions to be attempted.

1. Discuss the different methods of measuring temperatures above 1500°C.

Describe in detail the method you would prefer for measuring the temperature of a steel melting furnace.

$$(a) C_p - C_v = -T \left(\frac{\partial p}{\partial v} \right)_T \left(\frac{\partial v}{\partial T} \right)_T^2.$$

$$(b) \frac{\partial C_v}{\partial v} = T \frac{\partial^2 p}{\partial T^2}.$$

$$(c) \frac{\partial C_p}{\partial p} = -T \frac{\partial^2 v}{\partial T^2}.$$

What is the value of $C_p - C_v$ in a perfect gas?

3. Deduce from Van der Waal's equation the ratio between the lowering of temperature and the difference of pressure on the two sides of a porous plug.

Explain the term 'temperature of inversion'.

4. Distinguish between conductivity and diffusivity.

Find an expression for the conductivity of a gas.

Discuss briefly the principle underlying a carbondioxide recorder.

5. Deduce Planck's equation for the distribution of energy in the spectrum of a black body radiation.

Describe an experimental arrangement for the measurement of Stefan's constant.

Second Half

Examiners— { PROF. S. N. BOSE, M.Sc.
MR. J. M. BOSE, M.A., B.Sc., BAR-AT-LAW.

Group A

Not more than two questions to be attempted from EACH group.

1. A bar of Circular Section ($rad=a$) is made of material such that a length λ can hang vertically from one end without producing permanent extension. Prove that the greatest length which can rest horizontally on two supports without producing permanent flexure is $\sqrt{2a\lambda}$.

2. Prove that for a reinforced concrete beam of depth d and breadth b

$$\frac{2a}{bh} = \mu \frac{h}{d-h},$$

where a is the total area of steel reinforcement and μ the ratio of the direct modulus of elasticities of concrete in compression and steel in tension.

3. A uniform beam of length l is built in horizontally into two walls, the ends being on the same level. Find an expression for the bending moment at either end and draw a curve showing the variation B.M. along the beam.

4. Obtain expressions for stresses developed in their cylindrical shells under internal pressure.

If the Poisson's ratio for a thin steel plate be $3/10$, prove that for a cylindrical boiler with hemispherical ends the thicknesses of the plates for the cylindrical and spherical parts should be in the ratio 17:7.

Group B

1. Explain the origin of viscosity of gases on the basis of the kinetic theory, and show that when the pressure is not too low, viscosity is independent of pressure. How does viscosity vary with temperature?

Describe any method of determining accurately the viscosity of air at any given temperature.

2. Discuss on the basis of the Van der Waal theory (i) the existence of a critical temperature, (ii) the inversion temperature for the Joule-Thomson effect.

Describe any method of liquefying hydrogen..

3. Describe and discuss the principle of any modern pump which enables us to obtain a vacuum with pressure of about 10^{-7} mm. of Hg. or less.

How will you measure such low pressures?

4. Explain how, from various physical properties, the size of a gas-molecule can be approximately deduced, as well as the number of gas particles in 1 c.c. at N.T.P.

FOURTH PAPER

The questions are of equal value.

Attempt THREE questions only from EACH half.

First Half

Examiners— { PROF. J. RIFFKIN, D.Sc. (Glas), Dip. R.T.C., A.M.I.
Mech., F.R. Econ. S.
MR. P. C. GANGULI, B.Sc.

1. A two-stage air compressor is to deliver air at 800 lbs./in.² abs. The cylinders have the same stroke and the air is cooled to atmospheric temperature, 15°C. in the inter-cooler. Determine the ratio of the cylinder diameters. State clearly the assumptions made.

2. Sketch the *PV* diagrams for the theoretical Otto and Diesel cycles. Which is theoretically the more efficient, assuming the same ratio of compression? In actual practice which is the more efficient?

Deduce an expression for the ideal efficiency of the Diesel engine cycle. State clearly the assumptions made.

3. Steam at 200 lbs./in.² abs. with 50°C. of superheat is used in a steam turbine, and after doing 120 C.H.U. of work per lb. it is exhausted to a condenser at 1 lb./in.² abs. and reduced to water at 30°C. Find the condition of the steam entering the condenser and, if the turbine generates 5,000 K. W. and the condensing water rises 14°C. in temperature, estimate the approximate weight of water used per minute. K_p for superheated steam = 0.577.

4. With reference to a steam engine define:—

- (a) Thermal efficiency.
- (b) Rankine efficiency.
- (c) Efficiency ratio.

An engine uses 13.2 lbs. of steam per I.H.P. hour. The pressure gauge reading taken on the steam pipe close to the steam chest is 180 lbs. per sq. inch and the vacuum gauge reading 18.5 inches of mercury. Find the efficiency ratio.

Prove any formula you use.

5. In a boiler trial 3,600 lbs. of coal were consumed in 24 hours. The weight of water evaporated was 28,800 lbs. and the steam pressure by gauge was 96 lbs. per sq. inch. The coal contained 3 per cent of moisture and 3.9 per cent. of ash by analysis. The feed water temperature was 95°F. Calorific value of 1 lb. of coal = 13,000 B.Th.U. Determine the efficiency of the boiler, and the equivalent evaporation (1) per lb. of dry coal, (2) per lb. of combustible, from and at 212°F.

Sketch the following:—

- (a) Pressure gauge.
- (b) Gauge glass with necessary cocks.

Second Half

Examiner—PROF. S. K. MITRA, D.Sc.

1. Distinguish between the natural frequency and the resonant frequency of an oscillatory circuit.

Derive an expression for the natural frequency of an oscillatory circuit in terms of its electrical constants.

2. Explain bel, decibel, and néper.

Express in decibel the gain per stage of a resistance capacity amplifier having:—

Valve resistance	...	...	10,000
Valve amplification	...	...	15
External resistance	80,000 ohm.		

3. Discuss the action of a valve maintained high frequency generator. Give conditions for maximum output and maximum efficiency.

4. Derive an expression for the field strength at any point over a flat conducting earth due to radiation from a vertical earthed aerial.

5. Write short notes on *any three* of the following:—

- (a) quartz oscillator,
 - (b) super-regeneration,
 - (c) ionosphere,
 - (d) static frequency changer.
-

PHYSICAL CHEMISTRY

Examiners :- $\left\{ \begin{array}{l} \text{PROF. J. N. MUKHERJEE, D.Sc. (Convener).} \\ \text{PROF. J. C. GHOSH, D.Sc.} \\ \text{MR. A. T. MAITRA, M.A.} \\ \text{MR. N. G. CHAKRABARTI, M.Sc.} \\ \text{MR. K. K. KUMAR, M.Sc.} \\ \text{DR. S. C. CHAUDHURI, D.Sc.} \\ \text{DR. S. P. RAYCHAUDHURI, D.Sc.} \end{array} \right.$

Physical—General.

The questions are of equal value.

Not more than SIX questions are to be attempted.

Logarithmic tables will be supplied.

1. At 9.5°C . the dissociation pressure of ammonium hydrosulphide is 175 mm.; at 25.1°C . the pressure is 501 mm. Calculate the molecular latent heat of sublimation in which is included the heat of dissociation.

Deduce thermodynamically the equation which you have used in the above calculation.

2. Describe the experimental methods for determining the degree of hydrolysis of a solution of urea hydrochloride or potassium cyanide.

The hydrolytic dissociation of a $\frac{N}{10}$ solution of KCN is 1.12% at 25°C . Calculate the dissociation constant of hydrocyanic acid at 25°C .

[Dissociation constant of water at 25°C . = 1×10^{-14} .]

3. Explain clearly how—

(a) hydrogen gas has been liquefied ;

(b) oxygen is separated from nitrogen by the rectification of liquid air.

Or,

Apply the van der Waal's equation and the Dieterici equation to deduce the value of $\frac{RT_c}{p_c v_c}$, and discuss which equation gives results in better agreement with experimental facts.

4. Explain fully what is meant by the iso-electric point of a protein, and describe briefly the various methods of determining it experimentally.

Or,

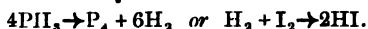
Discuss clearly the methods by which the size of colloid particles have been determined, explaining the principles underlying the methods, and point out the limitations of the methods you describe.

Zsigmondy found that a colloidal suspension of silver containing 6.8×10^{-8} gm. of silver per c.c. exhibited on the average 20 particles in the field of view of the ultramicroscope. The volume of the solution in the field of view, as calculated from the dimensions of the instrument, was $\frac{1}{100}$ of a cubic millimetre. Calculate the size of the particle constituting the suspension on the assumption that it is spherical in shape.

(Given the density of silver = 10.5 gm. / c.c.)

5. Write an account of the calculation and measurement of potential differences at the junction of aqueous solutions of electrolytes.

6. Discuss the kinetics of either of the following reactions:—



How will you find out if a chemical transformation in a gaseous system is taking place in the homogeneous gas phase, or on the walls of the reaction vessel?

7. A dilute solution of sulphuric acid is electrolyzed at low current densities between an anode of Platinum and cathodes of the following metals: (a) Platinum, (b) Nickel, (c) Copper, (d) Lead, (e) Mercury. Discuss the relative values of electrical energy which are necessary to generate the same quantity of hydrogen in each case. What experimental method would you adopt to determine these magnitudes?

Or,

Give a complete account of the lead accumulator cell and the Edison storage battery.

8. Write an essay on atomic numbers.

Physical—Special—First Paper.

The questions are of equal value.

Not more than FIVE questions are to be attempted.

1. Discuss methods for determining the mean free path and the diameter of molecules of a gas.

2. Write an essay on homogeneous catalysed gaseous reactions.

3. Give a critical account of the work of Haber.

4. Discuss, with typical illustrations, the methods and principles involved in potentiometric titrations.

5. Calculate the work done when one molecule of one volatile liquid dissolves in x molecules of a second. Hence obtain an expression for the heat of a mixture. When does the relative lowering of vapour pressure decrease with the temperature, and when is it independent of the latter?

6. Discuss, with typical illustrations, the rôle of sensitizers in photochemical reactions. Explain how the life period of excited sensitizer molecules in gaseous systems can be calculated.

7. Deduce thermodynamically the Gibbs Adsorption Isotherm, and discuss experimental attempts to verify this relation.

8. Discuss critically the important theories that have been proposed to explain the origin of the charge on colloidal particles. Which of these theories is in your opinion most suitable, and why?

Physical—Special—Second Paper.

The questions are of equal value.

Not more than FIVE questions are to be attempted.

1. Write an essay on Nernst's Heat Theorem.
2. Write an essay on chain reactions, with special reference to (i) the combination of hydrogen and oxygen, or (ii) the oxidation of phosphine.
3. Write an essay on the kinetics or reactions involving electrolytic ions.
4. Explain what is meant by electronic, vibrational, and rotational transitions of a diatomic molecule. Indicate the approximate energy difference in volts-electron and in calories per gm-mol between two successive levels as also the magnitude of the frequencies of radiation emitted or absorbed as a result of such transitions.

Or,

Write a short but connected note upon: activation, collisions of the first kind, collisions of the second kind, pre-dissociation, photo-dissociation, band-spectra, and heat of dissociation.

5. Give an account of recent work on the artificial disintegration of elements.
6. Write an essay on the kinetics of the coagulation of a colloidal solution by the addition of electrolytes.
7. Deduce an exact relationship between the osmotic pressure of an ideal solution and the lowering of the freezing point. Describe an accurate method of measuring the freezing point of a solution, and distinguish between the true and apparent freezing points.
8. Write an essay on the method of detecting non-radioactive isotopes. Write what you know about the heavy isotope of hydrogen.

INORGANIC CHEMISTRY

Examiners—	{	Mr. P. RAY, M.A. (Convener).
		Dr. P. NEOGI, M.A., Ph.D.
		Dr. P. B. SARKAR, Dr. es. S.C., A.I.C.
		Mr. H. D. MUKHERJEE, M.Sc.,
		Dr. R. C. RAY, M.A., D.Sc.—External (Patna).
		Dr. P. K. BOSE, D.Sc.

Inorganic—General.

The questions are of equal value.

Answer ANY SIX questions.

1. Compare the physical and chemical properties of the elements of Group VI of the Periodic Table, with special reference to the various compounds formed by them.

2. Write short notes on *any three* of the following: (i) active hydrogen; (ii) X-ray spectrum; (iii) radioactive equilibrium; (iv) isotopes.

3. Name the oxyacids of nitrogen, and discuss their constitution. Describe the action of nitric acid upon zinc, iron, iodine, and potassium ferrocyanide.

4. Describe in detail the corrosion of industrial metals when exposed to atmospheric conditions, and explain the latest theories put forward to account for the phenomenon. Give three different methods generally employed for the protection of metals against corrosion.

5. How does lead occur in nature and with what other metals is it found to be associated? In what localities are lead ores found in India, and how are these being worked out? Describe the general process of extracting and refining the metal.

6. Describe the preparation of the following substances, and state their properties and uses:—

- (i) Hydrazine hydrate; (ii) Ultramarine; (iii) Platinum black; (iv) Ceric ammonium nitrate.

7. Discuss the principles of electrometric titrations, and state their limitations.

8. The silica in a 1 gm. sample of material is volatilized as silicon tetrafluoride, which is passed into water. The aqueous solution required 20 c.c. of *N* alkali for neutralization with methyl orange as an indicator. What is the percentage of silica in the sample?

Inorganic—Special—First Paper.

The questions are of equal value.

Answer ANY FIVE questions.

1. State the fundamental law of Crystal chemistry, and show how it accounts for the chemical and physical properties of crystals. Give an account of the classification and constitution of natural silicates as deduced from the above law.

2. What are radiocative indicators? Give an account of the various chemical and bio-chemical problems that have been solved with the aid of radioactive indicators.

3. Write notes on *any two* of the following:—

- (i) Heavy hydrogen; (ii) Intermetallic compounds; (iii) Metallic carbonyls.

4. What actions are possible in a system consisting of carbon, air, and steam? Discuss fully the industrial utilization of these reactions and the conditions necessary for them.

5. Discuss *any two* of the following statements, giving reasons and

- (i) In a precision analysis indirect method should not be resorted to.

- (ii) The simple cuprous salts are represented by the general formula CuX and not by Cu_2X_2 ; while the reverse is the case with mercurous salts.
 - (iii) Many difficult separations and identifications, requiring careful adjustment of P_H and other conditions, repetition of the process or fractionations, can be easily effected by the modern methods based on special reagents.
6. Discuss in terms of the Phase Rule the various isothermal forms which a three component system (two salts with a common ion and water) can assume, exclusive of the formation of solid solution or mixed crystals.
7. Which elements of the Periodic Classification have yielded co-ordinated compounds resolvable into optical isomers? With what success have Pasteur's classification methods been employed in resolving co-ordinated compounds into optical isomers? Give instances.

Inorganic—Special—Second Paper.

The questions are of equal value.

Answer ANY FIVE questions.

1. State the characteristic properties of covalent compounds, as distinguished from those of the electrovalent ones. What is the modern conception regarding the nature of covalent linkage? Explain the conditions that govern the transition from an electrovalent to a covalent binding, and give examples to illustrate your answer.
2. What are polyacids? How the the polyacids and their salts obtained? Describe the use of some of these in analysis, and discuss their constitution.
3. Discuss the evidences for regarding the rare-earth elements as trivalent and not bivalent as previously supposed.
Give reasons for the classification of the rare-earths into two series—ceric and yttric. Discuss the electronic structure of these elements and their position in the periodic table.
4. It is generally accepted that the salts of chromium are complex in character. What are the evidences in favour of the above assumption? How many sulphates and chlorosulphates of chromium have been obtained? How have their constitutions been determined?
5. Give an account of the chemistry of bivalent silver, monovalent nickel, bivalent chromium, and trivalent molybdenum.
6. What do you know of the geo-chemistry of scandium? To which natural family of elements does it belong? Describe its isolation, and compare its properties with those of the known trivalent elements.
7. Give a short account of the methods of production, composition, and properties of special steels, explaining the influence of carbon and other elements in modifying their physical properties.

8. Give a short history of the discovery of rhenium, and describe the preparation of the metal and four of its important compounds. What analogy do the element and its compounds show with manganese and its compounds?

ORGANIC CHEMISTRY

Examiners: { PROF. P. C. MITTER, M.A., Ph.D. (Convener)
 DR. M. QUDRATI KHUDA, D.Sc.
 DR. A. C. SARKAR, M.A., Ph.D.
 DR. J. C. BARDHAN, D.Sc.
 MR. D. CHAKRABARTI, M.Sc.
 DR. B. B. DEY, D.Sc.
 PROF. R. N. SEN, M.A., M.Sc.

Organic—General.

The questions are of equal value.

Attempt SIX questions only.

1. Give a brief résumé of the methods in use for the resolution of externally compensated compounds, and state clearly how you would proceed in resolving the following :—

(a) methyl ethyl thetine chloride, (b) menthol, (c) methyl phenyl allyl benzyl ammonium iodide.

2. What views are at present held regarding the position of the double bonds in citral? How is the isomerism of citral-a and citral-b explained?

Describe a synthesis of methyl heptenone from the elements.

3. Give some methods that are applicable for the preparation of unsaturated and cyclic ketones.

Briefly state the chief characteristic properties of these compounds that may help you to distinguish them from saturated open-chain ketones.

4. What are the principal methods for the synthesis of the isoquinoline ring? Illustrate the application of *one* of the methods for the synthesis of an alkaloid.

5. Discuss the relation between chemical constitution and colour of (a) Azo-dyes, (b) Triphenyl methane dyes.

6. Write a short essay on the use of the organometallic compounds of zinc and of magnesium in synthesis.

7. How are the following substances *best* prepared?—

- (a) Diethyl amine.
- (b) Adipic acid.
- (c) Resacetophenone.
- (d) Benzoyl acetic ester.
- (e) Dimedone.

- (f) α -methyl indol.
- (g) Michler's ketone.
- (h) 3-3'-4'-trioxyflavone.

8. An organic base is found to contain C=71.5, H=8.6, and N=9.3%. It gives a violet colour with ferric chloride and forms a mono-acetyl derivative. On exhaustive methylation it gave a product $C_{10}H_{10}O$ which was oxidised by permanganate to an acid $C_8H_8O_3$. The latter yielded, on heating with hydriodic acid, methyl iodide and an acid $C_7H_6O_3$ which can be decomposed with the formation of phenol. The acid $C_8H_8O_3$ gives *two* isomeric mononitro derivatives. Discuss the constitution of the base.

Organic—Special—First Paper.

The questions are of equal value.

Attempt FIVE questions only.

1. Give a brief account of the aliphatic diazo-compounds, with special reference to their preparation and synthetic uses.

2. Narrate briefly the development of our ideas regarding the constitution of (a) Glucose, and (b) Sucrose.

On what evidence has the constitution of glucose been finally revised?

3. Summarize our knowledge regarding the different factors that govern the formation and stability of carbon rings. Does there exist any difference between the higher and the lower members of this series of organic compounds? If so, what reasons will you assign for the existence of such differences? How would you support your statement by experimental observations?

4. Give a concise but clear account of the chemistry of Δ^1 -carene, and explain its bearing on the *isoprene rule*.

5. Write short notes on:—

- (a) Muta-rotation ;
- (b) Walden inversion ;
- (c) β -lactones.

6. How are the following substances prepared?—

- (a) 1 : 1-Dimethyl cyclohexane-2-one.
- (b) Suberone.
- (c) Dimethyl glyoxime.
- (d) β -acetyl glutaric ester.
- (e) β -methyl methane-triacetic acid.

7. Give a brief account of the alkyl glutaric acids, with special reference to their methods of formation, reactions, and synthetic uses.

8. How are the following substances best prepared, and what are their reactions with ethyl cyan-acetate?—

- (a) β -iodopropionic ester.
- (b) Cyclopropane-1 : 1 Dicarboxylate.
- (c) α - γ -Dicarboxy glutaconate.
- (d) Acetone cyanohydrin.
- (e) Trans- β -decalone.

Organic—Special—Second Paper

The questions are of equal value.

Attempt FIVE questions only.

1. What are the methods available for the synthesis of Naphthalene hydrocarbons?

Describe the synthesis of—

- (a) cadalene ;
- (b) 1-methyl-7-ethyl naphthalene.

2. Describe a method of *direct* synthesis of a flavanol.

What are the idoflavones? How are they synthesized?

3. Give a concise and clear account on the recent synthetic work on the quinine group of alkaloids.

4. Give an outline of the processes by which the following may be synthesized:—

- (a) Histidine.
- (b) Ascorbic acid.
- (c) Ephedrin.

5. How are the follownig substances best prepared?—

- (1) meta-opianic acid ;
- (2) phenyl-propionic acid ;
- (3) 3: 4-methylenedioxy phenyl acetonitrile ;
- (4) β -(α -naphthyl) ethyl alcohol ;
- (5) anthraquinone-2-aldehyde.

6. Give an account of the vat dyes containing sulphur.

7. An organic acid gave the following results on analysis:—

0.1531 g. gave 0.3888 g. of CO_2 and 0.1410 g. of H_2O .

The silver salt gave 41.1% of Ag and when the acid was treated with bromine and afterwards with alcoholic potash it gave an acid containing 70.1% C and 9.1% H.

The latter on heating with sulphuric acid was converted into an aromatic acid which yielded m-xylene on distillation with lime.

Suggest formulas for the three acids.

8. Write an essay on the molecular transformations in purely aromatic compounds.

APPLIED CHEMISTRY

FIRST PAPER

The questions are of equal value.

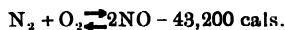
First Half

Examiners- $\left\{ \begin{array}{l} \text{MR. N. N. SEN, M.Sc.} \\ \text{DR. P. B. SARKAR, DR.Sc., A.I.O.} \\ \text{MR. H. N. DASGUPTA, M.Sc.} \end{array} \right.$

Only THREE questions are to be attempted.

Full Marks—50.

1. In the synthesis of nitric acid and ammonia the primary reactions are



Discuss fully the effect of temperature and pressure on these reactions and refer, for illustration, to the manufacturing processes.

2. Describe any electrolytic method by which you can manufacture chlorine, laying stresses on the following:—

(Choice of anode material, utility of a diaphragm, concentration of the electrolyte, and arrangement of the electrolytic plant.

Calculate the electrical energy required to produce sufficient chlorine for making 16 kg. of bleaching powder.

3. Compare the Parkes and the Pattinson processes of desilverizing lead, and explain the theory involved in each of them.

4. Give an account of the commercially important alloys and compounds of manganese, describing the sources from which they are manufactured, the methods of their preparation, and the properties on which their uses in chemistry, industry, and in the arts are dependent.

5. What are the chief sources of thorium, and where does it occur in India? Discuss its chief chemical properties, differentiating them from those of the rare earth metals, and state which of its properties have been taken advantage of in the industrial manufacture of its salts.

6. State the nature and the limits of tolerance of the impurities that are usually present in a commercial sample of thorium nitrate.

Second Half

Examiners- $\left\{ \begin{array}{l} \text{DR. WHEELER} \\ \text{DR. M. N. GOSWAMI} \end{array} \right.$

Attempt ANY THREE of the following.

Full Marks—50.

1. Discuss the modern synthetic phenol-resin industry, with particular reference to the possibility of its establishment in India.

2. Describe the effects of temperature, pressure, and moisture on the course of distillation of soft and hard wood.
3. Write notes on *any three* of the following :—
 - (a) Effect of the presence of organic and inorganic matters in cane sugar juice on the purity and crystallisation of sugar.
 - (b) Extraction and purification of alkaloids.
 - (c) Synthetic rubber from coal tar and the problem of its vulcanisation.
 - (d) Diazotisation and its application in industry.
4. Describe, with sketches, the commercial preparation of *any three* of the following :—
 - (a) Resorcin from benzene.
 - (b) Antipyrin.
 - (c) Ether sulphuric.
 - (d) Synthetic adrenaline.
 - (e) Magenta by nitrobenzene method.
5. A sample of coal is given to you. How would you advise its best commercial utilization?

SECOND PAPER.

The questions are of equal value.

First Half

Examiners-- $\left\{ \begin{array}{l} \text{DR. J. C. GHOSH, B.Sc.} \\ \text{MR. A. MAITRA, M.A.} \end{array} \right.$

Attempt only THREE questions.

1. Write an essay on 'the artificial production of cold and its use in industries', with special reference to any one modern refrigerator.
2. Describe the chemical changes that take place during the charging and discharging of lead-storage cells and of Edison cells. Describe the construction of both the cells, and compare their advantages and disadvantages respectively.
3. (a) Let 200 lbs. of water at 40°F. (the lowest temperature attainable at the time) be mixed with 300 lbs. of water at 190°F. Calculate the resulting change of available energy.
 (b) In what directions are attempts being made to increase the efficiency of steam engines?
4. Write a short account of the theory of separation of binary liquid mixtures by distillation. Illustrate your answer.
5. Explain the following :—
 - (a) velocity constant ; (b) equilibrium constant ; (c) complex ion ;
 - (d) solubility-product ; (e) electrolytic solution tension ; (f) over-voltage ; (g) decomposition potentials ; (h) iso-electric point.

Second Half

Examiners-- { Mr. K. KUMAR, M.Sc.
Mr. J. R. SETHI;
Mr. U. P. BASU, M.Sc.

Attempt ONE question from each group.

GROUP I—(PHYSICAL).

1. Discuss, with experimental details, a method for the exact determination of free mineral acids in coloured solutions. How would you proceed to determine by conductometric titration the amount of sulphur in a sample of coal?

2. Describe the colorimetric method of determining the hydrogen ion concentration of an aqueous solution. What is the *nephelometer*? How would you proceed to estimate the percentage of chlorine in a sample of potable water with its aid?

3. Describe in detail an electrometric method for the quantitative determination of two different metals existing in the same solution.

GROUP II—(INORGANIC).

1. What is meant by the term *available chlorine* in *bleaching powder* analysis?

(a) The formula for calcium hypochlorite is $\text{Ca}(\text{OCl})_2$. From this calculate the percentage of *available chlorine* and of *total chlorine*. How do you explain this difference?

(b) 7.0484 grams of a sample of bleaching powder, when dissolved to make 500 ml. of the solution, required 28.7 ml. of a standard arsenite solution ($N=0.1213$) for an aliquote of 25 ml. What is the percentage of available chlorine?

[Given : $\text{Ca}=40$; $\text{O}=16$; $\text{Cl}=35.46$.]

2. How would you conduct a rapid technical analysis of—

- (a) Phosphate rock for phosphoric anhydride ;
- (b) Limestone for SiO_2 , R_2O_3 , CaO , and MgO ?

Explain the principles involved in each case. Why do you take recourse to double evaporation to dryness for determining the SiO_2 in limestone?

3. What is hardness due to in water? How would you determine?—

I. Temporary hardness—

- (a) due to calcium ;
- (b) due to magnesium.

II. Permanent hardness—

- (a) due to calcium ;
- (b) due to magnesium.

If a boiler feed water is very rich in sodium bicarbonate alkalinity, how would you render it fit for steam raising?

4. A 0.5 gram of a sample of baking powder, known to contain only NaHCO_3 , KHCO_3 , H_2O , in equal quantities and starch, yields on treatment with water 30.5 c.c. of dry CO_2 (at 0°C . and 760 mm.). Calculate the percentage composition of the powder.

GROUP III—(ORGANIC).

1. What different estimations of sulphur are usually necessary in the chemical examination of coal? State how these are generally carried out.
2. You are supplied with a sample of 'filled' washing soap. How would you proceed to analyze it, and how would you report your result?
3. Describe fully the method generally adopted for determining the total quantity of arabinose present in cherry-gum.

THIRD PAPER

The question are of equal value.

First Half

Examiners— { PROF. H. K. SEN, M.A., D.Sc., D.I.O.
DR. H. L. RAY, DR. ING.

Only THREE questions are to be attempted.

1. Describe, with a sketch, the method of determining the number of 'ideal' or 'theoretical' plates above and below the feed-plate for a certain performance in a continuous rectifying column.

Explain clearly how the reflux ratio and the partial condenser affect the height of the column.

2. What methods are used for the transportation of solids and liquids (a) from place to place horizontally, and (b) from a lower to a higher level? Discuss the relative advantages and disadvantages of each method.

3. When monochlorobenzene is nitrated, *o*- and *p*- nitrochlorobenzene are produced in the proportions of 1 : 2. The boiling point of the ortho compound is 119°C. at 8 mm. and that of the para compound 113°C. at 8 mm. These isomers form a eutectic mixture consisting of 2 parts ortho and one part para, and having a setting point 16°C. If the setting point of the pure ortho is 32°C., and that of the pure para, 83°C., draw the setting point curve, assuming it follows the straight line law, and from the various data, state how you would proceed to separate the isomerides, giving a diagrammatic sketch of the plant employed.

4. Describe, with sketches, a modern plant for the manufacture of sulphuric acid by the Chamber process. State the functions of each component, and, as far as possible, the chemical reaction that takes place therein.

5. Compare the physical and the theoretical differences between an Otto four-cycle engine and a Diesel engine. What is the expression for efficiency of a Diesel engine?

6. What are the various methods for registering very high temperatures? Describe any one apparatus completely.

Second Half

Examiners-- $\left\{ \begin{array}{l} \text{DR. FOSTER} \\ \text{MR. E. C. RAY, M.Sc.} \end{array} \right.$

Answer ANY THREE of the following.

1. Give a detailed description and method of working of Sweetland Filter. What are its advantages over the Kelly Filter and the Plate and Frame presses?

2. Describe the construction of a ball mill. What are the types of work for which it is most suitable? What are the factors controlling the fineness of the finished product in a ball mill?

3. What are the main factors influencing heat transfer in an evaporator? Describe the construction and method of working of a Kestner Film Evaporator, and explain its advantages in the light of the above factors. What are the types of work for which it is most suitable?

4. Explain by means of Hausbrand's diagram the operation of a multiple-effect evaporator. Explain clearly how the temperature and pressure are distributed in the different effects with changes in concentration and viscosity of the boiling liquid, assuming that the temperature of steam supplied to the first effect and the degree of vacuum in the last effect are held constant.

5. It is desired to concentrate a solution from 10 to 50 percent solids in a triple-effect evaporator. Steam is available at 15 lbs. per sq. in. gauge (249°F.) and a vacuum of 26-inch referred to a 30-inch barometer is maintained in the vapour space of the third effect. This pressure corresponds to a boiling point of 125°F. The feed to the evaporator is 50,000 lbs. per hour and its temperature is 75°F. The condensate leaves each effect at the temperature of the steam. The solution has a negligible elevation in boiling point and its specific heat may be taken as 1.00 at all concentrations. Coefficients may be taken as 500 in the first effect, 450 in the second, and 200 in the third, expressed as B.T.U. per sq. ft. per $^{\circ}\text{F.}$ per hour. All the effects have the same heating surface.

Calculate the heating surface and the consumption of steam per hour. The latent heats of steam at different temperatures to be found from Steam Table supplied.

FOURTH PAPER.

(Oil Technology.)

The questions are of equal value.

First Half

Examiners— $\left\{ \begin{array}{l} \text{DR. R. L. DUTT, D.Sc.} \\ \text{DR. M. N. GOSWAMI, M.A., DR. es. Sc.} \end{array} \right.$

Attempt ANY THREE of the following.

1. What are paraffins and paraffin waxes? Describe their uses. What important bye-products are obtained from them? Describe the bleaching of paraffin wax.

2. Write notes on—

- (a) utilization of gases from petroleum well ;
- (b) cracking of paraffin wax.

3. What do you understand by mixed glycerides? In what oils and fats do they occur? How do you proceed to examine and analyze an oil or fat to ascertain the different radicals? Explain fully.

4. Describe the processes now in use for the expression of fixed oils and fats.

5. What is rancidity of oils? How do you detect it? How do you propose to preserve an edible oil?

Second Half

Examiners— $\left\{ \begin{array}{l} \text{DR. N. N. GODBOLE, M.A., B.Sc. PH.D. (Berlin)} \\ \text{DR. M. N. GOSWAMI, M.A., DR. es. Sc.} \end{array} \right.$

Attempt ANY THREE of the following.

1. The oil stock for the manufacture of a variety of washing soap consists of the following: Groundnut oil— $\frac{1}{3}$, Tallow— $\frac{1}{8}$, Cottonseed oil— $\frac{1}{4}$, and Rosin— $\frac{1}{4}$. Discuss the quality of soap obtained.

2. Write an essay on the various methods of determining unsaturation in oils and fats.

3. Write notes on the changes in oils when they are—

- (a) hydrogenated ;
- (b) boiled ,
- and (c) distilled.

4. What are synthetic musks? What are the chief uses of those bodies in oil perfumery? How are these prepared?

5. What Indian raw materials would you use to manufacture the following?—

- (a) Geraniol.
- (b) Citral.
- (c) Terpineol.
- (d) Bromstyrol.
- (e) Isoeugenol.

How do you prepare them?

FOURTH PAPER

(Fermentation.)

The questions are of equal value.

First Half

Examiners— { DR. FOWLER
MR. P. B. SEN, M.Sc.

Only THREE questions are to be answered.

1. Describe carefully the physical, chemical, and biological changes which follow on the discharge of crude sewage into a river—

- (a) when there is ample dilution ;
- (b) when dilution is inadequate.

2. Give some account of the substances included under the following terms:—

Cellulose, Lignin, Hemi-cellulose, Humus, Pectin.

3. You are given a mould and a yeast to examine and identify. Describe carefully how you would set about this examination.

4. Write a short essay on the various methods for obtaining Nitrogen from the air, with special reference to Indian conditions.

5. Discuss the biochemical changes resulting in the appearance and disappearance of starch in plant cells.

Second Half

Examiners— { DR. K. P. BOSE
PROF. H. K. SEN, M.A., B.Sc., D.I.C.

Only THREE questions are to be answered.

1. Describe in detail the methods by which various species of yeast may be differentiated. How would you distinguish *torula*, *yeast*, and *mycoderma*?

2. Give some suggestions by which molasses from a sugar factory may be utilized by the help of micro-organisms. Give the outline of manufacture of one of your suggested products.

3. What is an enzyme? Give an account of different enzymes present in the industrial yeast. Briefly survey how the products of fermentation are influenced by the change in H-ion concentration.

4. Write an essay on the production of power alcohol from organic and inorganic materials, indicating the superiority or otherwise of the various methods.

5. Enumerate the more important industries dependent on (i) cellulose, and (ii) starch, and describe with technical details any one of these industries.

6. Give an account of the influence of phosphates on the alcoholic fermentation of sugar.

FOURTH PAPER

(Silicates.)

The questions are of equal value.

First Half

Examiners-- { MR. H. N. BOSE
MR. H. N. DASGUPTA

Attempt ANY THREE.

1. Define porcelain, and describe the manufacture of chemical porcelain beginning from the raw materials up to the finishing operations. How do you proceed to test the raw materials for this purpose?

2. What is clay? Discuss the various theories regarding clay formation. What is the action of heat on clay?

3. Write notes on *any three* of the following.—

- (a) Agglomerative and Agglutinative.
- (b) Engobing.
- (c) Seger Cones.
- (d) Photo ceramics.
- (e) Overglaze colouring.

4. What do you understand by crazing of a glaze? Discuss fully why hard paste porcelains show less tendency to craze than English earthenware.

5. Discuss fully what points you should consider before constructing a muffle furnace for enamelled ware.

Second Half

Examiners— { MR. L. GUPTA
MR. M. K. SEN

Only THREE questions are to be answered.

1. The average thermal efficiency of a glass tank furnace is assumed to be equal to 10 p.c. It is required to produce 50 tons of glass per day

containing 20% cullet in a tank furnace, using a gaseous fuel of the calorific value of 1,000 B.T.U. What should be the dimensions of such a tank?

2. Write the requisites of a good optical glass, with special reference to the chief optical constants which determine the use of a particular glass. Describe the manufacture of a double convex lens.

3. Write notes on: (a) Annealing; (b) Photosensitiveness of glass; (c) Regenerative system; (d) Recuperative system.

4. What bases other than the alkalis are generally used in the manufacture of glass? State the form in which they are used, and describe their effects on the quality of the glass produced.

5. Describe fully the industrial uses of silica gels.

BOTANY

FIRST PAPER

The questions are of equal value

First Half

<i>Examiners</i>	{	DR. S. HEDAYETULLAH, D.Sc. MR. K. P. BISWAS, M.Sc.
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Answer ANY THREE questions.

1. Describe the cell-structure of *Myxophyceæ*; and state your reasons for or against the application of the term *nucleus* to the central body of a myxophycean cell.

2. Review the gradual complexity in the methods of *sexual* reproduction in *Isokontæ*. To what extent can you trace a similar scale of evolution in the methods of *sexual* reproduction in other classes of *Algæ*?

3. Give a comprehensive idea of the evolution of unicellular and colonial members of *Green Algæ*. Discuss their systematic position in the light of modern research.

4. Write a short account of *Anthocerotæ*, and discuss their systematic position with reference to the structure of their *gametophytes* and *sporogonia* in comparison with other *Hepaticæ*.

5. Give an outline of the classification of *Musci*, and trace their affinities. Write a short note on the nomenclature of *Bryophyta*.

Second Half

Examiners— $\left\{ \begin{array}{l} \text{DR. P. N. GHATAK, M.Sc. Ph.D.} \\ \text{DR. S. R. BOSE, M.A., Ph.D.} \end{array} \right.$

The figures in the margin indicate full marks.

Answer THREE questions only, of which the FIRST ONE is compulsory.

1. What are the characters of *mosaic* diseases? What are the effects of *mosaic* on different parts of the plant-body—both morphological and histological? How are *virus* diseases transmitted? 18
2. What are the various diseases of the sugar cane? How do you control them? 16
3. What are the Fungi Imperfecti? How are they related to the higher fungi? 16
4. What are the main subdivisions of the Hymenomycetes? What are the distinguishing characters of the families? 16
5. Discuss the different theories of the nuclear fusion in the Ascomycetes with examples. What is the cytological aspect of the spore-formation within an ascus? 16

SECOND PAPER

First Half

Examiner—MR. D. P. MAJUMDAR, M.Sc.

(PTERIDOPHYTES.)

The figures in the margin indicate full marks.

THREE questions are to be attempted, of which Question 1 is compulsory.

1. Write an essay on *any one* of the following subjects:— 20
 - (a) The positions of Ferns in the vegetable kingdom.
 - (b) The origin of the leafy sporophyte.
 - (c) Distribution of Ferns in space and time.
2. Give an account of the morphology and life history of a *Phylloglossum* species, and discuss the affinities of the group with other *Lycopodiales*. 15
3. Describe in detail the structure and life history of any member of the *Psilotaceae*, and discuss its systematic position. 15
4. Which do you consider to be the most primitive group of living Ferns, and why? 15
5. 'If the *Equisetineae* do come from a common stock with the Ferns they must have branched off at a very remote period long before the latter had become completely differentiated.' Correct or justify. 15

Second Half

Examiner—DR. B. SAHNI, D.Sc.

The questions are of equal value.

Answer ANY THREE questions.

1. Describe the reproductive organs of any Indian member of the Bennettitales.
2. Discuss the evolutionary importance of *Ginkgo*.
3. Write notes on *Ephedra*, *Fitzroya*, *Podocarpus*, *Heterangium*, and *Mesoxylon*.
4. Describe the stem structure of the modern cycads, and compare it with that in any related gymnosperms.
5. Write a note on pollination and fertilization among gymnosperms.

THIRD PAPER

First Half

Examiner—MR. S. C. BANERJEE, M.A., B.Sc., F.Z.S.

The figures in the margin indicate full marks.

1. What are *tyloses*? Give an account of their physiological anatomy. 15
2. Give a short account of the structure and formation of the three principal types of *pneumathode*. 20

Or,

What are *tactile pits*? Describe the tactile pits found in *Cucurbitaceæ*.

3. What is the difference between *Heterophylly* and *Anisophylly*? Give illustrations. 15

Second Half

Examiner—PROF. S. P. AGHARKAR, M.A., PH.D., F.Z.S.

Answer ANY THREE questions. Illustrate your answers by suitable sketches wherever necessary.

1. Write a short essay on the trend of modern systematic Botany, illustrating your answer by reference to the systems of Bentham and Hooker, Engler and Hutchinson.

2. Write short notes on *any five* of the following, mentioning the families to which they belong and giving their geographical distribution: Balanophora, Fragaria, Punica, Juglans, Eichhornia, Wolfia, Amorphophallus, Dischidia.

3. Describe the range of floral structure and discuss the affinities of *any two* of the following: Gramineæ, Euphorbiaceæ, Myrtaceæ.

4. The Campanulales are regarded as including types showing the highest grade of development in flowering plants. Discuss this view and point out the characters on which it is based.

5. Give a short account of the vegetation of any part of the Himalayas or the Khasi hills you may have visited.

FOURTH PAPER

First Half

Examiner—DR. J. C. SENGUPTA, M.Sc., Ph.D.

The questions are of equal value.

The answers should be brief.

1 *Either,*

What are the principles that govern the entrance of water and solutes into a plant cell? How would you determine Osmotic Value and Suction Tension, and what are their variations in plants?

Or,

Give an account of the water-household of the different ecological groups of plants, with special reference to the problems of Xerophytism and drought resistance.

2. *Either,*

Give an account of the nitrogen metabolism of plants with the chemical nature of the compounds concerned.

Or,

Describe how the elements Carbon and Nitrogen are circulated in nature, and briefly indicate the physiological and the chemical nature of the processes concerned.

3. *Either,*

What are the chief external factors that influence growth and their important formative effects? What are internal factors, and what is the present state of our knowledge about them?

Or,

How far can Reproduction in the lower and the higher plants be influenced by external factors?

4.

Either,

Describe the various movements in plants with short notes on each.

Or,

Describe the various aspects of Geotropism.

Second Half*Examiner*—S. C. MAHALANOBIS, B.S., F.R.S.E.*The questions are of equal value.**Answer only two questions.*

1. Discuss peculiarities of floral structures from an ecological standpoint.
 2. Substantiate as fully as you can the statement that external organs and internal anatomy are both correlated with ecological peculiarities.
 3. What factors determine the natural habitat of a plant? If the seeds become carried to a different set of external conditions, how do the young plants adapt themselves to the changed environment?
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FIFTH PAPER*The figures in the margin indicate full marks.***First Half***Examiner*—DR. P. K. SENGUPTA, M.Sc., PH.D.

1.

*Either,*Give a brief historical account of the studies of the mechanism of 'ascent of sap'. 25*Or,*

Give a concise account of the systematic work on the flora of Bengal.

2. Write an essay on *either* (a) the present position of the Darwinian theory, *or* (b) the inheritance of acquired characters. 25**Second Half**

Examiners-- { MR. I. BANERJEE, M.Sc.
DR. S. N. DASGUPTA, M.A., PH.D.

1. What are the principal oil-seed crops of India? Write a note on their distribution, cultivation, and method of extraction of the oil. 20

2. *Either,*

Write a note on inter-specific hybridization, and give an account of the characters of the hybrids. 15

Or,

Write an essay on the methods of improvement of crop-plants.

3. *Either,*

Write a note on the cytological basis of mutation. 15

Or,

Write short notes on: (a) Xenia, (b) Graft-hybrids, (c) Crossing-over, (d) Aneuploidy, and (e) Trisomic mutant.

PHYSIOLOGY

FIRST PAPER

Examiners— { SIR NILRATAN SARKAR, KT., M.A., M.D., LL.D., D.C.L.
RAI DR. U. N. BRAHMACHARI, BAHADUR, M.A., M.D.,
Ph.D., F.A.S.B.
DR. B. B. SARKAR, D.Sc.

The questions are of equal value.

Question 1 and ANY TWO of the other three are to be answered.

1. Discuss the physico-chemical changes in the blood during the Respiratory Cycle.

Explain how Respiration is concerned with the acid-base balance of the human system.

2. Discuss the mechanism of the physiological activation of Insulin.

3. Discuss in detail the various factors concerned in the control of Capillary Circulation.

4. Discuss critically the recent ideas regarding the nature and causation of the oestrous cycle and its relation to the formation of the corpus luteum.

SECOND PAPER

Examiners— { Mr. S. M. BANERJEE, M.Sc., M.B.
 PROF. W. BURRIDGE
 PROF. S. C. MAHALANOBIS, B.Sc., F.R.S.E.

The questions are of equal value.

Answer only FOUR questions.

1. Write an essay on Inhibition.
2. What parallels can you find between the excitation of activity in the members of the muscle nerve preparation and the stimulation of retinal end-organs by light? Discuss the significance of your findings.
3. Give an account of the fundamental doctrines of the physiology of the nervous system. Critically examine their validity.
4. Discuss the rôle of the autonomic nervous system in the adjustment of responses to meet emergencies of life.
5. Write what you know of the connections and functions of the corpus striatum.
6. Write notes on ---
 - (a) Posterior longitudinal bundle.
 - (b) Humoral theory of nervous action.
 - (c) Lovén reflex.
 - (d) Wedensky inhibition.

THIRD PAPER

Examiners— { LT.-COL. A. C. MACGILCHRIST
 PROF. S. C. MAHALANOBIS, B.Sc., F. R. S. E.
 MR. N. M. BOSE, M.Sc.

The questions are of equal value.

Answer only FOUR questions.

1. Discuss the doctrine of specific nerve energies (Johannes Müller).
2. Write a commentary on the functions of visual purple (Rhodopsin), based upon (1) its distribution and reaction in the human eye, and (2) its absence from the eyes of certain animals.
3. Describe the functions of (1) the semi-circular canals, and (2) utricle and saccule.
4. Discuss Helmholtz' and Hering's theories of colour vision, and explain how far they account for various phenomena of vision, especially partial and total colour-blindness and subjective sensations.

5. Describe some efficient method of olfactometry for estimating comparative sharpness of smell in different individuals.

6. Discuss the physiological nature and mechanism of pain.

FOURTH PAPER

Examiners— { Mr. P. B. SEN, M.Sc.
Mr. N. C. BHATTACHARYYA, M.A.
Mr. S. P. NIYOGI, M.Sc., M.B.

The questions are of equal value.

Answer FOUR questions.

1. Describe the relationship between the various inorganic salts and vitamins in the diet and the effects of hypervitaminosis.

2. In what forms is sulphur taken into the body? What changes do these compounds undergo, and to what physiological processes do they contribute?

3. Describe in detail the effects produced upon the general metabolism of the body by a period of starvation.

4. Write an essay on Protein Minimum.

5. Describe briefly the chemistry of thyroxine and the metabolic changes associated with disorders of the thyroid gland.

ZOOLOGY

FIRST PAPER

First Half

Examiners— { Mr. D. MOOKERJEE, M.Sc.
Prof. K. N. BAHL, D.Sc., D.Phil.

The questions are of equal value.

Attempt ANY THREE of the questions.

1. Give an account of the palæontological evidence bearing on the origin of either Mammals or Reptiles.

2. Discuss Mimicry and Warning colouration.

3. Explain some of the adaptations of vertebrates to aquatic life.

4. What are the Secondary sexual characters? How would you explain them?

5. Write short notes on *any three* of the following:—

(a) Pangenesis, (b) Malpighi's work, (c) Theory of Cataclysm, (d) Pelagic fauna, (e) principle of classification.

Second Half

Examiners— { Mr. J. L. BHADURI, M.Sc.
Dr. E. N. GHOSH, M.D.

Each question carries 25 marks.

Write *any two* essays on the following:—

- (a) Nature of, and theories on, the causes of variation.
- (b) Recent views on the origin of species.
- (c) Origin of vertebrates.
- (d) Characteristics of deep-sea animals.
- (e) Inheritance of acquired characters.

SECOND PAPER

First Half

Examiners — { Dr. H. N. RAY, M.Sc., Ph.D.
Prof. A. B. MISRA, D.Sc., D.Phil.

The questions are of equal value.

Attempts ANY THREE questions.

1. Give a brief account of the cytology of different types of Parthenogenesis.

2. 'In many animals sex is determined by, or at least correlated with, the presence or absence of a particular chromosome in the fertilised egg.' Explain this with a few examples.

3. Describe the histology of *any two* of the following:—

(1) Spleen, (2) Thymus, (3) Kidney, (4) Bone.

4. Discuss the phenomenon of reversion in terms of Mendelism.

5. Describe a few well-known cases of Sex-reversal, and discuss the genetical aspects of the problem.

Second Half

Examiners— { PROF. H. K. MOOKERJEE, D.Sc., D.I.C.
PROF. G. MATHAI, M.A., Sc.D.

The figures in the margin indicate full marks.

Answer ANY TWO questions.

1. Discuss the various types of gastrula formation in Chordata. 25
 2. Trace the various modes of origin of coelom in Chordata. 25
 3. Give an account of the development of scales in Vertebrata. 25
 4. Describe the development of the brain in the chick. 25
 5. Describe the formation of the fetal membranes in rabbit. 25
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THIRD PAPER

The questions are of equal value.

First Half

Examiners— { DR. H. N. RAY, M.Sc., Ph.D.
RAI G. C. CHATTERJEE BAHADUR, M.B.
DR. P. SEN, M.Sc., Ph.D.

Attempt ANY THREE questions.

1. Enumerate the different amœbæ found in the human gut. Give the distinctive features of the various forms.
2. Describe the structure of a Sycon. How would you trace the more specialized forms of sponges from this?
3. Discuss the systematic position of Ctenophora.
4. Give the morphology and bionomics of an Ancylostoma.
5. Discuss the phylogeny of the Echinoderms. State the evidences which indicate bilateral origin of the radial symmetry of the adult forms.

Second Half

Examiners— { MR. D. MOOKERJEE, M.Sc.
DR. B. PRASAD, B.Sc.

Not more than THREE questions are to be attempted.

1. What are the distinguishing characters of Gephyrea? Discuss their affinities, and comment on the phenomenon of Sexual Dimorphism as exhibited in *Bonellia*.

2. Write a detailed account of the larval forms of Crustacea.
3. What are the distinguishing characters of (a) Aptera, (b) Hemiptera, (c) Diptera, and (d) Lepidoptera? Cite two examples of each order.
4. Describe the structure of the Utenidium of a fresh-water mussel. What are the modifications of this structure in various classes of Pelecypoda?
5. Write short notes on any five of the following:—
 - (a) Botryoidal tissue, (b) Amphineura, (c) Trochophore, (d) Limulus, (e) Ommatidium, (f) Green Gland, (g) Scolopendra, and (h) Teredo.

FOURTH PAPER

First Half

Examiners— { PROF. H. K. MOOKERJEE, D.Sc., D.I.C.
 { PROF. G. MAHAJ, M.A., Sc.D.

The figures in the margin indicate full marks.

Answer ANY TWO questions.

1. Give an account of the feeding mechanism of any Ascidian that you know of. 25
2. Discuss the various theories on the origin of fins. 25
3. Compare the skulls of Modern Amphibians representing each order. 25
4. Give a comparative account of the mechanism of respiration in fishes. 25
5. Give a detailed account of the structure of the proboscis of *Balanoglossus*. 25

Second Half

Examiners— { MR. G. K. CHAKRABARTI, M.Sc.
 { PROF. A. B. MISHRA, D.Sc. D. Phil.

Answer ANY THREE of the following.

1. Give a detailed account of the exoskeletal structures in Mammalia.
2. What anatomical evidences are there in support of the statement, 'Birds are glorified reptiles'?
3. Discuss the relationships of *Sphenodon punctatum*.

4. What modifications of structure in adaptation to an aquatic mode of life are found in the Mammalia?

5. Give a comparative account of the hearts of Reptilia, Aves, and Mammalia, and discuss the significance of the differences between them.

GEOLOGY

FIRST PAPER

Examiners-- { Mr. KIRANKUMAR SENGUPTA, M.A., B.Sc., F.G.S.,
Dr. M. S. KRISHNAN, M.A., A.R.C.S., Ph.D.

The questions are of equal value.

Answer ANY SIX questions, ONE from each of the Groups A, B, C, D being compulsory.

Group A

1. 'Out of the geosynclines have come the mountains.' Discuss and illustrate the statement.

2. Give an account of the seismological evidence bearing upon the structure of the earth, and discuss the theory of isostasy in connection with this.

3. How are earthquakes caused? Describe the primary phenomena and the surface effects. How are the earth sounds produced?

Group B

4. Describe the occurrence, associated minerals, and origin of rock salt in India. How is it mined?

5. Give an account of the mode of occurrence and origin of the principal types of asbestos deposits in India. Describe the characters of the various types of asbestos, their preparation for the market, grading, uses, and specifications for different purposes, and give the market quotations.

6. Describe the characters, mode of occurrence, and origin of kyanite and sillimanite. What are their principal uses, and how are they suited to them? Give an account of a kyanite or sillimanite deposit in India.

Group C

7. Describe and classify the ore-deposits of magmatic origin, particularly in relation to the association of minerals and their position with respect to the igneous body.

8. Give an account of the ores of gold and silver, referring to their origin and paragenesis. To what uses are the metals put, and what factors contribute to their use as money?

9. Give a full account of the coal restriction scheme and the controversy it has raised. In what way are the consumers of coal interested in restriction plan?

Group D

10. Write a short essay on the important developments which have taken place in the different branches of Geology during the present century.

11. *'A nation's needs or desires for mineral wealth have no stated relation to its actual mineral possessions. what it needs is often in the territory of another nation. . . . Commerce is thus born, and the nation which must have the metal or ore in question backs up its commerce and helps it to fasten its claims for permanent control of the deposits in question by legislation, by diplomacy, and, if need be, by war.'* Discuss and illustrate this statement, with reference to the present day mineral economics.

SECOND PAPER

Examiners— $\left\{ \begin{array}{l} \text{MR. SARATIAL BISWAS, M.Sc.} \\ \text{DR. A. M. HERON, D.Sc.} \end{array} \right.$

The questions are of equal value.

Answer FIVE questions, at least TWO from EACH group.

Group A

1. Discuss the criteria by which the original nature of a metamorphosed rock can be recognized.

2. Discuss the rôle of volatiles in petrogenesis.

3. Give an account of the different types of igneous activity during the Gondwana times in India.

4. Write notes on the following:—

(a) Plateau basalt, (b) Myrmekite, (c) Autometamorphism, (d) Doliomorphic rocks, (e) Reaction pair.

Group B

5. State what you know about the following:—

Space-lattice, screw axis of symmetry, pleochroic halo, rotary polarisation.

6. Explain clearly the phenomena of dispersion of optic axes and of median lines.

7. Discuss the chemical composition of albite and anorthite as members of an isomorphous series.

8. Name the minerals formed on the desiccation of an inland sea.

Discuss the physico-chemical conditions which govern the sequence of their formation.

THIRD PAPER

Examiners - { DR. M. CHATTERJEE, M.Sc., Ph.D.
DR. M. R. SAHNI

The questions are of equal value.

Answer THREE questions from Group A, and TWO from Group B.

Group A

1. Trace the history of development of our ideas regarding the age and succession of the Cambrian beds of Salt Range and Spiti. Are undoubted Cambrian rocks found in other parts of India and Burma?

2. Give an account of the Purana rocks of Extra Peninsular India.

3. Compare the stratigraphic sequence as observed in the Salt Range with that met with in either Kashmir or in the Spiti Himalaya. Discuss the faunal relation of the two areas during the later Palaeozoic and Triassic times.

4. Give a sketch map to illustrate the disposition of the land areas and the seas of the Cretaceous period in India and adjacent countries. Correlate the Upper Cretaceous sequence of Central India with that seen in Assam and the Trichinopoly area.

5. Write a geological report on any area examined by you in the field. Discuss fully the evidence on which you base your conclusions.

Group B

6. Write a note, with sketches, on the tritubercular theory of development of the mammalian molar.

7. Give the evolutionary history of the trilobites. Illustrate your answer by reference to Indian forms wherever possible.

8. Discuss in detail the evidence of the presence of Faunal Provinces in India during Palaeozoic times.

9. Define the distinctive characters of the following genera, stating the geological horizon and range: Fusulina, Zaphrentis, Modiola, Flemingites, Marsupites, Conocoryphe, Oppelia, Mastodonsaurus, Listriodon.

FOURTH PAPER

(Coal)

Examiners— { **MR. NIRMALNATH CHATTERJEE, M.Sc.**
DR. M. S. KRISHNAN, M.A., A.R.C.S., Ph.D.

The questions are of equal value.

Answer FIVE questions in all, including Questions 1 and 2 which are compulsory.

1. What are the different classifications of coal suggested by different authorities? Explain, with examples, the current classification of coal used in the Indian coal trade.

2. What do you understand by the term 'Calorific value' of coal, and how is it expressed? Give your opinion on the importance and utility of the various formulæ that have been suggested for the determination of the calorific value. Explain briefly the best method by which this can be determined for samples of coal.

3. Describe the physical and chemical characters of the banded constituents of coal.

4. Write what you know about the occurrence of peat-beds in the Gangetic delta in general and in the neighbourhood of Calcutta in particular. Give the extent of the beds, and explain the mode of formation of peat.

5. Give a succinct account of any coal-field you have visited, with sketch plan and sections. State what position this field occupies with reference to the total annual output of coal in India.

6. What are the different forms in which sulphur occurs in coal? Explain why the question of sulphur is important to the metallurgist and the coal consumer. Give the characters of the tertiary coals of India, especially with reference to the sulphur content, and examine the question of their profitable utilization.

7. Explain the following terms, with some examples:—

Fuel ratio ; Ball coal ; Welter's law ; Pillar and stall method ;
Goaf ; Spontaneous combustion ; Water-gas ; Anthraxylon ; and
Coalite process.

(Igneous Rocks.)

Examiners— { **MR. SARATLAL BISWAS, M.Sc.**
DR. A. M. HERON, D.Sc.

The figures in the margin indicate full marks.

Only FIVE questions to be attempted.

1. What is the origin of the ultrabasic rocks? Describe the ultrabasic rocks of India and Burma.

2. Compare the processes of Daly and Bowen regarding the incorporation of foreign rocks in igneous magmas, and discuss the question of superheat in magmas. 20
 3. Describe the principal Himalayan granites and their distribution in the Himalayas. 20
 4. Describe, with diagrams, the mode of crystallization of the Mg_2SiO_4 — SiO_2 system. 20
 5. Describe *any five* of the following rock types:— 20
Picrite, Plateau-basalt, Monchiquite, Granophyre, Tinguaita, Tonalite, Lherzolite, Gneiss.
 6. Explain the following terms: variation diagram, devitrification, consanguinity, consertal texture, paragenesis. 20
 7. Give a summarized account of the development of the classification of igneous rocks. 20
 8. Give an account of the composition of primary magma, and discuss the question of its ultimate source. 20
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EXPERIMENTAL PSYCHOLOGY

FIRST PAPER

The questions are of equal value.

First Half

Examiner—MR. M. N. BANERJEE, M.Sc.

You need not attempt more than THREE questions.

1. Concentrate all your knowledge to clarify and correlate the mental function with the activity of the cerebral nervous apparatus.
2. Dwell carefully on the significance of the organs of internal secretion in the development of the *Personality*, noting the contribution of each of the factors that join issue.
3. Explain the physiological mechanism of the auditory apparatus as fully as you can, and criticize the various theories of audition that have been propounded, including that for the perception of *beats*.
4. Give a systematic presentation of the trichromatic theory, and try to explain the various anomalies of colour vision.
5. One psychologist has said: 'Most of the simpler motives—basic tendencies independent of their rational or conscious aspects—depend on bodily rhythms. Some rhythms depend on chemical changes. Restlessness is a rough indication of intensity of motives.' Explain, and write a commentary on the statement.

Second Half

Examiner—DR. S. C. MITRA, M.A.; D. PHIL.

Attempt ANY THREE questions.

1. Write a short essay on the contemporary schools of Psychology, contrasting their views on the method, scope, aims of psychology, noting specially the influence of the Gestalt on theories of *perception* and that of psycho-analysis on the psychology of *affection*.

2. What are the hereditary factors in the mental growth of a child? What do you know of interrelation of abilities? What is Intelligence?

3. Form a critical estimate of all the methods that you are aware of measuring *emotion*, noting the criteria of measurement, advantage, and limitation in each case.

4. How would you proceed to give 'ideal' instructions to get the three types of simple Reaction time of your subject? Discuss the various sources of error that may vitiate the result at the different stages of experiment.

5. Write short notes on the physiological psychology of *any five* of the following: (a) space perception, (b) memory, (c) attention, (d) learning, (e) dream, (f) conditioned reflexes, (g) after-image, (h) adaptation, and (i) photochromatic interval.

SECOND PAPER

The questions are of equal value.

First Half

Examiner—MR. B. C. GHOSH, M.A. M.B., CH.B.

Try ANY THREE.

1. Classify and describe the *amentias* and their neurogenesis.

2. Write notes on the psychogenesis of *sleep*, *phobias*, and *epileptic fits*.

3. Discuss the formation of *delusions* in Paranoia and of Spontaneous and Induced Hallucinations.

4. Give an account of the *psychological types* of Jung with regard to their genesis and morbid manifestations.

5. Illustrate the states of *mal-integration*, *dis-integration*, and *non-integration* of personality.

Second Half

Examiner—DR. G. S. BOSE, D.Sc., M.B.

Try ANY THREE.

1. Give a brief account of the mechanism of *repression* and the part played by the *super-ego* in this connection.
 2. Describe the *psychological peculiarities* of a case of *dementia praecox*.
 3. How is *hypnosis* induced? How would you explain the increased *suggestibility* in *hypnosis*?
 4. Discuss briefly the relation between *psychoneuroses* and *sexual perversions*.
 5. Write short notes on: (a) *condensation in dreams*, (b) *cataplexy*, (c) *negative transference*, and (d) *sexual frigidity*.
-

THIRD PAPER

First Half

Examiner—PROF. H. D. BHATTACHARYYA, M.A.

The questions are of equal value.

Attempt ANY THREE of the following.

1. Trace the development of Space Perception in the animal kingdom. Begin from the lowest species and support your statements with data from experimental investigations.
2. Enunciate and illustrate the principles applied in the determination of sensory discrimination in animals, specially of the lower order.
3. Discuss two at least of the principles of General Animal Sociology as formulated by Alverdes. Numerous concrete illustrations should be given.
4. Attempt a classification of animal reactions into different types. Discuss the principles on which you base your classification and present experimental data.
5. Write notes on *any four* of the following:—
 - (a) Sexual selection.
 - (b) Mendel's Law.
 - (c) Dermal light sensation.
 - (d) Tropism.
 - (e) *Æsthetic* sense of birds.
 - (f) Olfactory sense impression in insects (Fabre).

Second Half

Examiner—M. L. GANGLI, M.Sc.

Answer ANY THREE of the following questions.

1. Discuss the nature of the knowledge of concrete objects possessed by higher animals.

Or,

Discuss critically the following statement of Bergson:—

‘Whatever, in instinct and intelligence, is innate knowledge, bears in the first case on *things* and in the second on *relations*.’

Illustrate your answer whichever alternative you choose.

2. Give some illustrations of the use of tools and implements by different types of higher animals, and indicate what light they throw on the nature of intelligence possessed by each type.

3. Taking a concrete case of animal learning, discuss whether a mechanistic or a hormic explanation of animal behaviour is more satisfactory.

Or,

Write a short essay on the Handling of Forms by higher animals.

4. Discuss, with illustrations, *any two* of the following among higher animals:—

- (a) Practical Judgment.
- (b) Articulate Ideas.
- (c) Morality.
- (d) Imitative ability.

5. Give a brief sketch of the different types of animal society, touching in this connection upon the influence of social instinct on individual behaviour among higher animals.

FOURTH PAPER

Examiner—MR. H. P. MAITI, M.A.

The questions are of equal value.

First Half

Attempt ANY THREE questions.

1. Illustrate how the peculiarities of children's plays throw light on important aspects of their mental development, specially as regards (1) intelligence, (2) social attitude, and (3) emotional tendencies.

2. Outline Bühler's views about the course of mental development. How far does Koffka agree with him?

3. Compare a normal child of one year with a normal child of four as regards their principal mental characteristics.
4. Discuss different theories of Imitation on the basis of children's imitative acts. Does Imitation fully explain growth of ideals in children?
5. Critically examine Kirkpatrick's views about normal moral development of children.
6. Illustrate the Gestalt theory about the general principle of mental development by reference to the growth of (1) number ideas, and (2) perception of form, in children.

Second Half

Examiner—MR. G. PAL, M.Sc.

Answer ANY THREE questions.

1. (a) What do we learn from the study of twin resemblances regarding the inheritance of mental traits?
(b) Discuss the relation between heredity and environment in the light of the following quotation from Sandiford: 'No *social* heritage however good can replace a sound *biological* heritage'.
 2. (a) Explain and illustrate the method of establishing the validity and the reliability of Intelligence Tests.
(b) Describe the uses of Intelligence Tests from the point of view of an educationist.
 3. (a) State and examine Thorndike's Laws of Learning.
(b) How does Thorndike modify his fundamental law of learning in the light of the *gestalt* hypothesis?
 4. (a) What are the chief sources of error in the traditional type of examination?
(b) How does the New Type Examination seek to avoid them?
 5. State the basic principles of the Montessori System, and examine how far the system is applicable to Indian conditions.
 6. Write short notes on: Plateau stage ; School fatigue ; Transfer theories ; Recognition span.
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ANTHROPOLOGY.**FIRST PAPER**

The questions are of equal value.

Answer ANY THREE questions from EACH half.

First Half

Examiner—MR. ANATHAN CHATTERJEE, M.B., B.Sc.

1. Enumerate the morphological peculiarities of Neanderthal man.
2. Compare the Heidelberg jaw with the mandible of a modern man.
3. Enumerate the differences in skeletal features of the Cromagnons from Grimaldi and the 'Old Man' of Cromagnon.
4. Describe the fauna and flora of Europe during the great Ice Age.
5. Write short notes on :—
(1) Australopithecus, (2) Wadjak skulls, (3) Gibraltar finds, (4) Brünn skull.

Second Half

Examiner—MR. M. N. BOSE, M.B., C.M.

1. Write a dissertation on the Phenomenon of Convergence.
 2. Describe the anatomical characters of the Cebus.
 3. Describe the diagnostic characters of man as a type.
 4. How would you distinguish the skull of a Chimpanzee from that of a Gorilla?
 5. Write short notes on :—
(1) Anaptomorphus, (2) Parapithecus, (3) Mesopithecus, (4) Dryopithecus.
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SECOND PAPER

The questions are of equal value.

First Half

Examiner—MR. TARAKCHANDRA RAYCHAUDHURI, M.A.

Answer ANY THREE questions.

1. Discuss the place of the *Sinanthropus* in the early history of Man.
2. Describe the somatic characters of the Ainu of Japan. What are their racial affinities?
3. How would you differentiate between the Dinaric and the Alpine races of Europe? Discuss the distribution of the former in Europe.
4. What are the racial characters of the aborigines of Central India? How are they related to the Vedda of Ceylon?
5. Discuss the distribution of hair colour in the Baltic regions of Europe. Is the 'Red hair' related to the blond or the brunet type?

Second Half

Examiner—MR. HARANCHANDRA CHAKRADAR, M.A.

Only THREE questions are to be attempted.

1. Give the distribution and ethnology of the Arabo-Berber or Semito-Hamite group of peoples in Africa.
 2. Write full ethnological notes on the following:—
Palaeo-Amerind ; Nèsiot ; Neo-Amerind ; Pareocean ; Strandloopers.
 3. Discuss the anthropological history of the Egyptians.
 4. Discuss the racial history of the Polynesians.
 5. Specify the probable waves of migration that peopled the American Continent before Columbus.
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THIRD PAPER

Examiners— { DR. PANCHANAN MITRA, M.A., PH.D.
MR. N. G. MAJUMDAR, M.A.

The questions are of equal value.

Answer ANY FIVE of the following.

1. Briefly describe the culture-stages of Palæolithic East and South Africa, correlating them wherever possible with Europe and comparing the Indian and African palæoliths.

2. How far should the study of Indian Palæolithic types be revised in the light of recent finds from China?

3. What was the part played by the North German Forest cultures in Mesolithic Europe, and what would you consider to be the intrusive elements therein?

4. Give a brief pre-history of the domesticated animals, agricultural implements, and the wheel, considering them to be possible parts of one culture-complex in the old world.

5. Describe briefly the Danubian cultures in the Early Bronze Age.

6. What are the archaeological vestiges of the movements of the Nordics and Brachycephals in Europe prior to the introduction of iron?

7. Give a brief account of the megalithic and Early Iron Age cultures in South India.

8. Describe briefly the chief chalcolithic and copper-age sites in India, drawing a map showing the distribution.

9. Discuss the date of Mohen-jo-daro, and give an account of the religious beliefs of the Indus people.

10. Write short notes on *any four* :—

Susa II ; Anau III ; Kish ; Hallstatt ; La Tene ; Dolmen ; Altamira ; Gungeria ; Hackett's Bhutra palæolith ; Wynne's Godavari chip.

FOURTH PAPER

Only THREE questions need be attempted in EACH half.

First Half

Examiner—TARACHAND DAS, M.A.

The figures in the margin indicate full marks

1. Write a short note on dual organization, indicating its possible origin. Discuss the Indian data with regard to the existence, or otherwise, of dual organization in India. 16

2. Critically examine the different theories of origin of Associations. State your conclusions. 14

3. Define levirate ; indicate its different varieties, giving Indian examples. Mention kinship usages, in India, connected with the institution, pointing out the variations in the same from the Vedic and Heroic age. 16

4. How would you explain cultural similarities in continuous as well as discontinuous areas? 18

As a case in point, discuss and describe the privileged familiarity or privileges obtaining between grandparents and grandchildren in Chotanagpur, Bengal, and the Pentecost Islands.

Second Half

Examiner—DR. N. C. BANERJEE

The questions are of equal value.

1. What do you understand by the 'historical method' in ethnology? Give an account of the rise of this movement in Europe and America.
 2. Determine the nature and character of Schmidt's 'Supreme Being', and show the distribution of this concept among the peoples of 'primitive culture'.
 3. 'Chieftainship is a religious rather than a political institution in Polynesia and parts of Melanesia and Africa.' Discuss. Do you find any such concept among the tribes of India?
 4. What is ancestor-worship? How far is it prevalent in India? Discuss Herbert Spencer's contention that ancestor-worship is the root of every religion.
 5. Write short notes on *any two* of the following: (a) Group-marriage, (b) Bachelor's house, (c) Parents-in-law taboos.
-

(Group A)

FIFTH PAPER

Examiners— { DR. P. MITRA.
SIR NILRATAN SARKAR, KT., M.A., M.D.

The questions are of equal value.

Only FIVE questions are to be attempted.

1. Show how the changes brought about by the arboreal adaptation of the remote primate ancestors of man overlaid by a second extended series of adaptations for bipedal running on the ground played important parts in the evolution of man.
2. Illustrate by examples from mammal-life the changes consequent on volant or aquatic adaptation.
3. What are the characters liable to Mendelian inheritance in man?
4. What part has environment played in differentiating the skin-colour and the shape of the nose in man?
5. Clearly differentiate between the racial psychology of the Negro, the Alpine, and the Nordic.
6. Estimate carefully the temperamental factors of a people favourable to new adaptations.
7. Examine the likely results of clash of cultures in the modern world.

(Group A)
SIXTH PAPER

The questions are of equal value.

First Half

Examiner—MR. TARAKCHANDRA RAYCHAUDHURI, M.A.

Answer ANY THREE questions.

1. Who are the Proto-Australoids? How would you account for their presence in India?
2. Show the distribution of the Brachycephals in India. Discuss their origin.
3. Do the Kayasthas of Bengal constitute an ethnic type?

4. Write full notes on *any four* of the following:—

Frankfort Horizontal, Cranial deformation, Angle of torsion of the femur, Prognathism, Standardization, Cubital angle, and Pilastric index.

5. You are given the following data. Calculate the mean value and standard deviation with their probable errors:—

(Nose Lengths in mm.)

53	49	58	55	53
52	54	51	54	55
54	53	51	50	58
56	51	52	56	57
59	56	56	62	54
50	59	55	57	55
54	51	55	53	57
53	51	60	59	51
57	49	52	51	55
55	61	58	53	55

Second Half

Examiner—MR. P. C. MAHALANABIS

Answer ANY THREE questions.

1. What do you understand by the Mongolian fold in the eye? Discuss the distribution of this trait among human races.
2. What is Steatopygia? Among what races is this character found? What do you suppose to be its cause?
3. What modifications take place in the human skeleton as a result of the squatting habit? Illustrate your answer.
4. What do you know of the remains of Early Man in Palestine? How was it related to the Neanderthal Race of Europe?
5. What are the racial traits of the Palae-Siberians? With what other races are they somatically allied?

(Group B)**FIFTH PAPER**

The questions are of equal value.

First Half

Examiner—DR. PANCHANAN MITRA, M.A., PH.D.

Only THREE questions are to be attempted.

1. Illustrate the ambivalent emotional attitudes of the primitive peoples with regard to their enemies and the dead.
2. How far would the analogies of primitive taboo behaviour with compulsion-neurosis cases hold good?
3. Give a brief psycho-analytic interpretation of totemism, showing how far it is a result of the savage's dread of incest, and how it is confirmed by infantile recurrence in modern times.
4. Give a comparative estimate of the part played by environmental factors and by discovery and invention in the starting of a culture.
5. What are the modes of primary and secondary diffusion of culture-traits? Illustrate with examples.
6. How far could the age and area of distribution of traits of a culture-complex be correlated? Discuss the likely defects in such deductions.

Second Half

Examiner—DR. G. S. GHURZE, PH.D.

Only THREE questions are to be attempted.

All questions carry equal marks.

1. Discuss the organization and nature of primitive kinship.
 2. Discuss the relation between social position of woman and the state of economic development of society.
 3. Write a critical note on the organization and functions of the family in father-right and mother-right societies.
 4. Describe the nature and function of central authority in primitive society.
 5. Discuss the relation between magic and religion, and estimate their respective influence on primitive social life.
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(Group B)**SIXTH PAPER**

The questions are of equal value.

First Half

Examiner—MR. TARAKCHANDRA DAS, M.A.

Answer ANY THREE of the following questions.

1. Give a comparative estimate of the traditional 'tales of origin' of various Mundari speaking tribes of Chota Nagpur and Orissa. What light do they throw on the affinity of these tribes?
2. Describe the different means of acquiring mates prevalent among the Pre-Dravidian tribes of Chota Nagpur and Orissa.
3. Write an essay on the megalithic culture of Chota Nagpur and Orissa. What connection has it with the megalithic monuments of the other parts of India?
4. Compare the various political institutions evolved by the Birhors, Santals, and Oraons.
5. Trace the influence of Hinduism on the tribal population of Chota Nagpur and Orissa. How has it affected them?

Second Half

Examiner—RAI BAHADUR S. C. RAY, M.A.

Answer ANY THREE questions.

1. Give a comparative account of the religion of the Munda-speaking tribes.
 2. Compare the religious and social systems of the Munda-speaking tribes with those of the Oraons and allied tribes.
 3. Describe and discuss the contributions of the Pre-Dravidian and Dravidian populations of India to the Indian caste system.
 4. What are the traits in Munda marriage-ceremonies that would offer remarkable analogies to similar customs in Bengal?
 5. Illustrate from the life of primitive peoples the changes consequent on the adoption of crude agriculture by a mainly hunting people.
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(Group C)**. FIFTH PAPER**

Examiner—DR. NARAYANCHANDRA BANERJEE, M.A., PH.D.

The questions are of equal value.

First Half

Answer only THREE questions.

1. Analyze the religion of the Vedic Aryans, and discuss the importance of the fire cult in it, pointing out the prominence of the same in other primitive religions.
2. Give an account of the popular beliefs and superstitions of the post-Vedic period, and connect them with similar beliefs and ideas in present Hinduism.
3. Mention the chief traits of popular Vaisnavism, and discuss the place of hero-worship in it.
4. 'Popular Hinduism bears the stamp of many religions and of races.' Discuss.
5. Write critical notes on any three of the following :—
 - (a) Saivism in modern India.
 - (b) Hinduism and popular Buddhism.
 - (c) Saktism and its relation to the Tantra.
 - (d) Ancestor-worship in Hinduism.
 - (e) Magic in Vedic religion.

Second Half

The figures in the margin indicate full marks.

Answer Question 2 and ANY TWO of the others.

1. Give a critical analysis of the chief modern theories on 'caste'. How would you distinguish between caste and class, caste and subcaste? How are castes and subcastes formed? Give examples. 15
 2. Discuss the institution of marriage in its economic, social, and religious aspects. Estimate the results of the recent legislation on the marriage ideals of the various communities in India. 20
 3. State the various hypotheses as to the origin of totemism. How would you account for its decline in India? State clearly how it is connected with magic and animism. 15
 4. Discuss the relation between (1) religion and mythology, and (2) religion and morals. Can there be religion without theism? 15
 5. Give an account of the ritual life of any primitive society which you have studied from your field work. 15
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(Group C)**SIXTH PAPER***Examiner—MR. HARANCHANDRA CHAKRADAR, M.A.***First Half***The questions are of equal value.**Only THREE questions are to be answered.*

1. Give the distribution of levirate in India, and discuss its origin. Are there any evidences of the existence of this custom in ancient India?
2. What do you think was the origin of caste in India? Discuss the views specially of Risley and Hutton.
3. Describe the ceremony of *Upanayana*, and indicate its importance in the life of a twice-born Indian.
4. Discuss the advantages and disadvantages of living in a joint family. What has been the result of the impact of European culture on this custom?
5. Describe some customs or rites that may be calculated to show the affinity of the Indio-Aryans with other Aryan-speaking peoples outside India.

Second Half*The figures in the margin indicate full marks.**Only TWO questions need be attempted in this half.*

1. Describe briefly Kulinism, as is found among Bengalee Brahmans and Bengalee Kayasthas. Discuss the probable significance of the differences in this respect between the two castes. 26
 2. Describe the ritual of marriage—including preliminaries—of a high caste Bengalee Hindu, and compare it with that of a Bengalee Hindu caste of which water is not supposed to be accepted. 24
- Comment on the differences in custom, and indicate their probable origin.
3. Write a note on cross-cousin marriage, indicating the different forms of it and their distribution in India. 24
- Critically examine the different views of their probable origin.
-

Preliminary Examination in law,

January, 1934

FIRST PAPER

Candidates are required to give their answers in their own words as far as practicable.

The questions are of equal value.

First Half

Examiners— { MR. ANNADACHARAN KARKOON, M.A., B.L.
MR. RABINDRACHANDRA GHOSH, B.L., BAR-AT-LAW.
MR. AMALKUMAR SARKAR, BAR-AT-LAW.

Answer ANY FIVE of the following questions.

1. Describe and discuss the province of Jurisprudence.
2. Write a note on the Law of Nature.
3. Define (giving examples of) *any two* of the following :
(a) Corporation sole, (b) Intangible property, (c) Quasi possession.
4. What is Public Law? Contrast it with Private Law.
5. Define and explain Adjective law, giving examples.
6. State how rights in personam are extinguished.
7. Classify rights with examples.

Second Half

Examiners— { MR. AMIN AHMED CHAUDHURY, M.A., LL.B., BAR-AT-LAW.
MR. NIRMALKUMAR SEN, M.A., B.L.
DR. BIBHUTIRHUSAN RAY CHAUDHURI, M.A., PH.D.
BAR-AT-LAW.

Answer ANY FIVE of the following questions.

1. Briefly give the early history of Delict and Crime.
2. Explain and illustrate legal fiction. Give a short account of what Maine characterizes as the peculiar office of fiction in the historical development of law.
3. Write a note on *any one* of the following : (a) Patria Potestas, (b) Primogeniture.
4. Describe 'Equity' as a source of law. Compare and contrast it with any similar device employed in ancient Rome.
5. What, according to Savigny, are the constituent elements of a contract? In what respects is his analysis open to criticism?
6. Define 'Servitude', and give its important classifications with examples thereof.
7. Explain the growth of custom and its transformation into law.

SECOND PAPER

The questions are of equal value.

First Half

Examiners— { Mr. JAJNESWAR MAJUMDAR, M.A., B.L.
 „ S. C. CHOUDHURI, M.A., LL.B., BAR-AT-LAW.
 Dr. ASWINIKUMAR CHOUDHURY, B.A., LL.B., LL.D.,
 BAR-AT-LAW.

N.B.—FIVE questions and NO MORE need be attempted.

1. 'The imperial period closes, so far as the development of Roman Law is concerned, with what is known as the Byzantine period.' Discuss. Give some account of the sources of law during the Byzantine period.

2. 'The prætor was the central figure in the republican Rome.' Discuss. Give a brief account of the legislative powers of the prætor.

3. How does Justinian define Slavery? Give an account of the sources of slavery in the time of Justinian.

4. In classical law *caput* was the status of a person.' Explain. Give an account of *capitis deminutio* in Roman Law.

5. What were the natural modes of acquiring property?

One of the rabbits escapes from the warren of Titius and is caught by Gaius. Can Titius claim it back?

6. What is *bonorum possessio*? What was the order of giving *bonorum possessio* adopted by the prætor?

7. Give a short account of equitable defence in Roman Law.

Second Half

Examiners— { Mr. S. N. BHATTACHARYA, B.A., BAR-AT-LAW.
 „ RAMESCHANDRA PAL, M.A., M.L.
 „ SARVCHANDRA LAHIRI, M.A., B.L.

N.B.—FIVE questions only are to be answered.

1. Describe briefly the scope of 'Lex Aquilia'. How was the original scope subsequently extended?

2. A slave was mortally wounded by X; in the interval before his death he was appointed an heir by a will, and later on was struck by Y as a result of which he died. What are the liabilities, if any, of X and Y, and what would be the measure of damages?

3. A sows wild oats in the middle of B's land and B's crop is spoiled. To whom is A liable under the 'Lex Aquilia', and what is the extent of his liability?

4. A man hires a slave to drive a mule, but the mule breaks away and tears the slave's thumb off, and after that throws itself over a height.

Has the owner of the mule any right of action against the owner of the slave? If any, under what circumstances?

5. State briefly the principal steps in the development of Roman will, and contrast it with modern will.

6. 'In the infancy of Jurisprudence the citizens depend for protection against violence or fraud not on the law of crimes but on the law of torts.'

Explain.

7. Justify or criticize Maine's dictum that 'the progress of civilized societies is from status to contract'.

THIRD PAPER

The questions are of equal value.

First Half

Examiners— { Mr. SITARAM BANERJEE, M.A., B.L.
 „ NARAYAN CHANDRA KAR, B.L.
 „ MAHENDRANATH BAGCHI, M.A., B.L.

Attempt ANY FIVE of the following seven questions.

1. 'Law has been defined as the Command of Sovereign Authority.' How far does Hindu Law conform to this definition? Fully discuss.

2. Explain the text 'A fact cannot be altered by a hundred texts'. Illustrate your answer by examples.

3. In Hindu Law, marriage is said to be a sacrament. What do you understand by this? Are there any elements of contract in a Hindu marriage? Discuss. In Bengal a Kayastha marries a woman of the weaver caste. Is the marriage valid?

4. Is a Hindu Deity a 'juristic person'? Answer the question with reference to any leading case.

5. What is the idea underlying the adoption of a son in Hindu Law? Why cannot a person adopt his sister's son?

A person governed by the Bengal School of Hindu Law died, leaving a son *B* and a widow *C*, with an authority to the widow to adopt a son in case *B* died. *B* married *D* and then died childless. *C* then adopted a son, *X*. Is the adoption valid? Discuss. Would it make any difference if *B* died leaving a son?

6. Define a 'joint-family'. How far are the expressions 'joint-tenancy' and 'survivorship' applicable to Hindu Law? Do you think that the incidents of a joint-tenancy apply to a Mitakshara joint-family? Discuss.

7. *A* and *B* are members of a Mitakshara joint-family, possessing some ancestral properties. *B* acquires some properties without any help from the joint-family funds, and then dies leaving a widow, *C*. How would the several properties devolve on *B*'s death? Answer the question with reference to some leading case.

Second Half

Examiners— { Mr. JYOTIPRASAD SARBADHIKARI, M.A., B.L.
 „ SANATKUMAR CHATTERJEE, M.Sc., B.L.
 „ UPENDRAKUMAR RAY, M.A., B.L.

Answer ANY FIVE questions.

1. Describe the legal position of the *Mohunt* of a *Mutt*. How far are alienations made by him of the *Mutt* properties binding upon his successor-in-office?

2. Discuss the nature of the liability of a Hindu son (belonging to either School of Hindu Law) to pay his father's debts. Refer to some leading case in this connection.

3. Describe the powers of alienation of a *de facto* manager of an infant's estate. What are the duties of the alienee in this respect? Answer the question with reference to some leading case.

4. Is a paternal uncle's daughter's son an heir under the Hindu Law? Give specific reasons for your answer.

5. Discuss, with illustrations, the nature and the characteristics of an estate held by a Hindu widow. Would it be correct to say that it is equivalent to an English estate for life?

6. State briefly the facts and the principles laid down in the Tagore case.

7. Write a short thesis on the doctrine of 'spiritual benefit' as understood in the Dayabhaga School of Hindu Law.

FOURTH PAPER

The questions are of equal value.

Candidates are permitted to answer TEN questions in ALL: FIVE from each half.

First Half

Examiners— { MR. UMAPRASAD MUKHERJEE, M.A., B.L.
 .. PRAKASCHANDRA MALLIK, M.A., B.L.
 .. SAILENDRAPRASAD GHOSH, M.A., B.L.

1. How far is it true to say that legal sovereignty in England is vested in the Parliament, and political sovereignty rests with the electorate?

2. Explain the principles of law laid down in *Bradlaugh v. Gosset* (1884) 12 Q.B.D. 27 and *Stockdale v. Hansard* (9 Ad and E 1). How far were those principles applied by the Calcutta High Court in *Kumar Sankar Roy Chordhury v. The Hon'ble H. E. A. Cotton* (40 C.L.I. 515)?

3. Illustrate the advantages and disadvantages of a rigid as opposed to a flexible constitution. What kind of constitution—rigid or flexible—should you have for India? And why?

4. 'Legislatures even of self-governing colonies like Canada or Australia or the Irish Free State are non-sovereign legislative bodies.' (*Sarradhicari*.) Discuss.

5. Comment on the following:—

(a) No man shall be taken or imprisoned, disseised or outlawed or exiled, or in any way destroyed, save by the lawful judgment of his peers or in due process of law. (*Magna Charta*.)

(b) Judges in England hold office during good behaviour.

6. Discuss the principles of law laid down in—

Ex parte D. F. Marais, (1902) A.C. 109,

or,

In re Stallman, 39 Cal. 164.

7. Answer any two of the following:—

(a) Can a soldier refuse to fire on an unarmed association of men holding an alleged illegal meeting in a public square? If the meeting is declared by the Courts to have been legal, can the soldier then plead the orders of his superiors in defence to any charge against him?

- (b) Can the Crown in (i) England, (ii) India, levy taxation on the subject without legislative concurrence?
- (c) Can the Governor of a province in India be tried before any Court for (i) anything done or ordered by him in his public capacity, (ii) debts contracted by him in his province?

Second Half

Examiners— { MR. N. GOSWAMI, BAR-AT-LAW.
DR. H. N. SANYAL, M.A., PH.D., BAR-AT-LAW.
MR. TARADAS DUTT, M.A., B.L.

8. Distinguish between :—

- (a) martial law and military law;
(b) nationality and naturalisation;
(c) allegiance and domicile;
(d) adjournment and dissolution of Parliament.

Answer any two of the above.

9. Explain the provisions of :—

- (i) The Emergency Powers Act 1920;
(ii) The Parliament Act 1911.

10. What are the measures of redress open to a subject in England when his personal liberty is infringed?

11. 'There is considerable difference between jury trial in England and jury trial in India.' Discuss.

12. Explain clearly the Indian law of Sedition.

13. The ministers of the king in England have a threefold responsibility, moral, legal, and constitutional. Explain.

14. Explain the principles of law laid down in—

The Seven Bishops' case ;

or.

Spooner v. Juddoo, 4 M.L.A. 333.

July, 1934

FIRST PAPER

The questions are of equal value.

Answer FIVE questions only from EACH half.

Give the answers in your own words as far as practicable.

First Half

Examiners— { MR. BIJANCHANDRA MITRA, BAR-AT-LAW.
" SAILENDRAPRASAD GHOSH, B.L.
DR. S. K. GUPTA, M.A., D.L., D.LITT, PH.D.,
BAR-AT-LAW.

1. Write a short note on custom as a source of law.

2. What is meant by 'juristic person'? How does it come into being? Is an idol in Hindu Law a 'juristic person'?

3. Bring out fully the distinction between a 'right in rem' and a 'right in personam', giving examples in illustration of your answer.

4. Write a short note on the juristic conception of 'possession', with special reference to the theories of Jhering and Savigny.

5. What do you understand by 'jura in re aliena'? Give examples from Roman and English Law.

6. How far was recourse to self-help permitted in primitive societies? What vestiges of it still remain in modern (i) civil law, (ii) criminal law, and why?

7. What is meant by (i) 'adjective law', (ii) 'municipal law'? What is 'lex fori'? What are the necessary conditions for its application?

Second Half

Examiners— { MR. A. K. CHANDA, BAR-AT-LAW.
 „ S. N. BHATTACHARYA, B.A., BAR-AT-LAW.
 „ SUDHIRKUMAR BOSE, M.A., B.L.

1. Estimate the importance of Roman Law in the study of jurisprudence.

2. What is meant by 'natural justice'? What place has it in the administration of law?

3. How far have fictions contributed to the growth of law?

4. Discuss the position of females in ancient law.

5. What principles govern the formation of contract in English Law? How do they compare with those in Roman Law?

6. Trace the growth of the law of wills.

7. How would you justify (i) title by prescription, (ii) vicarious responsibility?

SECOND PAPER

The figures in the margin indicate full marks.

Not more than FIVE questions in EACH half to be attempted.

First Half

Examiners— { MR. RAMESCHANDRA PAL, M.A., M.L.
 „ JATNESWAR MAJUMDAR, M.A., M.L.
 DR. ASWINI CHAUDHURI, B.A., LL.B., LL.D.,
 BAR-AT-LAW.

1. What do you understand by 'Corpus juris civilis'? What were the services of Justinian to the cause of Roman Law? 10

2. Write short notes on *pignus* and *hypothec*. 10

3. Explain and illustrate 'innominate contracts'. 10

4. Explain clearly the concepts *usucapio* and *prescriptio*, and summarize the essential distinction between the two. 10

5. Briefly describe the natural modes of acquisition of property according to Justinian. 10

6. Explain *quasi-contracts* and *quasi-delicts*, and illustrate your answer by examples. 10

7. What were the nature and object of *fideicommissa*? Shew how the law of wills was affected by them.

Second Half

Examiners— { Mr. SATYENDRAKISOR GHOSH, M.A., B.L.
 „ PANCHANAN GHOSH, M.A., B.L.
 „ SADHANCHANDRA RAYCHAUDHURI, M.A., B.L.

1. What were the principles of liability in an action under the Lex Aquilia? 10
2. What do you understand *utilis actio* on the Lex Aquilia? Illustrate your answer by examples. 10
3. If a four-footed animal is killed, on what principle would damages be assessed under the Lex Aquilia—whether on the intrinsic value of the animal killed or on the interest the owner had in it? Give examples. 10
4. A slave who is pledged is killed. Discuss the rights of (a) the debtor, and (b) the creditor against the wrong-doer. 10
5. 'Jus Naturale is simply the Jus Gentium seen in the light of a peculiar theory.' Explain. 10
6. Write a short essay, illustrating the development of the law of contract from the ancient times. 10
7. What do you understand by (a) crimes and (b) torts? Illustrate the dictum of Maine that 'Penal law of ancient communities is not the law of crimes : it is the law of wrongs'.

THIRD PAPER

The questions are of equal value.

First Half

Examiners— { Mr. DHIRENDRAKRISHNA RAY, M.A., B.L.
 „ HARICHARAN GANGULI SASTRI, M.A., B.L.
 DEBABRATA MUKHERJEE, M.A., B.L.

1. State the original sources of Hindu Law, and examine their relative authority.

Or,

What part has been played by commentators in the development of Hindu Law?

2. How is the term 'daya' defined (i) in the Mitakshara, and (ii) in the Davabhaga?

Explain, by a comparison of the definitions, the distinction between the two schools.

Or,

State the Mitakshara doctrine of acquisition of property by birth.

Is the son's right acquired by birth in the father's property limited to ancestral property in the hands of the father?

3. Write a short note on the doctrine as to the religious efficacy of sonship in Hindu Law.

Or,

Examine how far the validity of an adoption in Hindu Law is determined by spiritual rather than temporal considerations.

4. *A*, a Hindu governed by the Bengal school of Hindu Law, dies, leaving two sons *X* and *Y*, who inherit his property in equal shares. *A*'s widow subsequently gives away *Y* in adoption. *X* thereupon claims the entire inheritance. Can *Y* resist the claim? Discuss, with reference to decided cases.

5. *A*, a Hindu governed by the Bengal school of Hindu Law, dies intestate, leaving him surviving a widow *W*, a brother *B*, and a son *S* who is insane. The insanity is cured during *W*'s lifetime. State who will succeed to the estate (i) upon the death of *A*, and (ii) upon the death of *W*.

Second Half

Examiners— { Mr. JYOTIPRASAD SARBADHIKARI, M.A., B.L.,
 „ ARUNCHANDRA BOSE, M.A., B.L.,
 „ SANTOSHKUMAR PAL, B.L.

1. Examine, with reference to decided cases, the limits to the exercise of a Hindu widow's power to adopt a son to her deceased husband.

Or,

Examine how far a Hindu widow's power to adopt a son is dependent on the vesting of her husband's estate in her.

2. Discuss, with reference to decided cases, whether the great-grandson of the grandfather of a deceased Hindu governed by the Mitakshara school is entitled to inherit in preference to the grandson of the great-grandfather.

Or,

Give some typical cases, from the judgment of the Privy Council in *Amarnath v. Firm of Hukumchand* (L. R. Ind. App. 162, s.c. 34 Cal. L.J. 355), to show where the personal earnings of a member of a Hindu joint family (i) become, and (ii) do not become, his separate property.

3. How far is the consent of the reversioners sufficient to validate an alienation by a Hindu widow? Refer to decided cases.

Or,

Discuss, with reference to decided cases, the liability of a Hindu widow to forfeit her husband's estate which has once vested in her, by reason of subsequent unchastity.

4. *A*, a Hindu governed by the Mitakshara school mortgages certain ancestral property to *M*. Subsequent to the mortgage a son *B* is born to *A*. Thereafter a partition takes place between *A* and *B*, and the mortgaged property is divided between them equally. *M* then sues *A* and *B* for a sale of the mortgaged property. *B* objects to a decree against his half share. Can the objection be sustained?

5. *A* bequeaths certain property to his three nephews *B*, *C*, and *D*. He then directs as follows: 'My three nephews shall possess the property in equal shares. They shall have no rights to alienate the same by gift or sale; but they, their sons, grandsons, and their descendants in the male line shall enjoy the same. If any die without leaving a male child, his share shall devolve on the surviving nephews and their male descendants, but not on his other heirs.' *A* dies, leaving him surviving the said three nephews *B*, *C*, and *D*, and a son *F*. *B* dies unmarried. Then *C* dies leaving a widow, but no issue. *F* sues *D* for a declaration of his rights in the property. What are the rights of the parties?

FOURTH PAPER

The questions are of equal value.

TEN questions to be attempted in ALL: FIVE questions from the
First Half and FIVE questions from the Second Half.

First Half

Examiners— { Mr. P. N. BANERJEE, M.A., B.L., BAR-AT-LAW.
 „ BISWESWAR BAGCHI, M.A., B.L.
 „ S. N. RUDRA, BAR-AT-LAW.

1. Discuss the advantages and disadvantages of federal constitutions with reference to the proposed federal constitution for India.
2. Explain the nature and the character of constitutional conventions in England. What are their sanction?
3. 'The rule of law no doubt secures greater individual freedom than *Droit administratif* but the latter possesses certain advantages over the former.' (*Sarradhicari*). Discuss.
4. What are the privileges of Parliament? Can the Courts in England adjudicate on them? If so, to what extent?
5. Can the Courts in (i) India, (ii) U. S. A., (iii) Canada, (iv) England declare statutes passed by the Legislature null and void?
6. Explain clearly (i) the nature of the Writ of Habeas Corpus, (ii) the precise effects of the Habeas Corpus Acts.
7. Discuss the principles of law involved in—

Either,
(i) *Ex parte D. F. Marais*, 1912 A.C. 109.

Or,
(ii) *Girindranath Banerjee v. Birendra Nath Pal*, 31 CWN 593.

Second Half

Examiners— { Mr. N. GOSWAMI, BAR-AT-LAW.
 „ D. P. CHATTERJEE, BAR-AT-LAW.
 „ KIRANSANKAR RAY, BAR-AT-LAW.

8. Distinguish between *any two* of the following:—
 - (a) allegiance and domicile;
 - (b) riot and affray;
 - (c) impeachment and bill of attainder;
 - (d) crown colony and protectorate.
9. Describe fully the English Law of Treason.
10. Can martial law be proclaimed in (i) England, (ii) India, in times of (a) war, (b) peace?
11. 'The supremacy of the rule of law necessitates the exercise of Parliamentary sovereignty.' (*Dicey*). Explain.

12. Write notes on *any two* of the following:—

- (a) the Comptroller and the Auditor General;
- (b) the Civil List;
- (c) the Committee of Privileges;
- (d) the Church of England Assembly Act, 1919.

13. State clearly the facts of, and discuss the principles of law involved in, *any two* of the following:—

- (a) The Seven Bishops' case, 12 St. tr. 183).
- (b) Danby's case, (11 St. tr. 599).
- (c) Darnell's case, (3 St. tr. 1).

14. Answer *any two* of the following:—

- (a) Can a private person arrest an offender without warrant? If so, under what circumstances?
 - (b) Can a person once delivered by habeas corpus be recommitted for the same offence?
 - (c) Can an illegal act be pleaded against a *British* subject as an Act of State?
 - (d) Plaintiff sues the Postmaster-General, England, for loss of exchequer bills alleged to have been lost by the negligence of an officer subordinate to the Postmaster-General. Does an action lie? If not, why not?
 - (e) A soldier in a regiment in India incites a fellow soldier to rebel against the Crown, and is sentenced to 1,000 lashes by a military tribunal. Can the soldier move a High Court in India?
 - (f) Can the Crown in England levy import duties on foreign goods without an Act of Parliament?
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Intermediate Examination in Law,

January, 1934

FIRST PAPER

The questions are of equal value.

First Half

Examiners— { MR. NOORUDDIN AHMED, B.L.
.. A. HAQUE, BAR-AT-LAW.

1. State the testamentary power of a Muslim under (a) Hanafi Law, (b) Shiah Law. To what extent is it modified by custom?
2. Does difference of (a) sect, and (b) that of religion, in any way affect the status of parties to a marriage under Muslim Law?
3. Classify residuaries according to Hanafi Law.
4. Explain and illustrate any four of the following: (a) Increase, (b) Option of puberty, (c) *Ijmaa*, (d) *Hizanat*, (e) *Iddat*.
5. Discuss one of the following cases:—
(a) *Imambandi v. Haji Mutsaddi*, I.L.R. 45 I.A. 73; 28 C.L.J. 409.
(b) *Abadi Begum v. Kaniz Zainab*, 54 I.A. 33.

Second Half

Examiners— { MR. A. QUASSEEM, B.A. LL.B., BAR-AT-LAW.
.. P. P. MUKHERJEE, BAR-AT-LAW.

1. Explain the maxim, 'the king can do no wrong'.
2. Enumerate the rights and duties of husband and wife under English Law.
3. State the duties of parents towards their illegitimate children.
4. Explain and illustrate any four of the following: (a) Natural-born subject, (b) Naturalized subject, (c) Domicile of origin, (d) Alien friend, (e) Local allegiance.
5. Discuss one of the following cases:—
(a) *Skinner v. Orde*, 14 M.L.A. 309.
(b) *Besant v. Narayaniah*, L.R. 41 I.A. 314; I.L.R. 38 Mad. 807.

SECOND PAPER

The questions are of equal value.

Candidates are required to answer ANY FIVE questions from EACH half.

First Half

Examiners— { MR. RAMAPRASAD MUKHERJEE, M.A., B.L.
.. MR. MOHIMAMUKUL HAJRA, B.L.

1. Explain what is meant by 'transfer of property by act of parties' by contrasting with transfers otherwise than by act of parties.

Name the various kinds of transfer of property dealt with in the Transfer of Property Act, and define any one of such transfers.

2. State the doctrine of *lis pendens*, and explain the necessity for such a doctrine.

Elucidate your answer by applying it to a specific illustration.

3. 'In order to establish the validity of a conveyance impeached as fraudulent on creditors, it is not enough to prove that it was for consideration ; it must also be proved that it was made in good faith.' Explain with reference to the leading case.

4. A sells land to B under which there is a coal mine, which is known to B (the buyer) but not to A (the seller), and which the former does not disclose to the latter, knowing that the latter is unaware of the fact. After the sale, A discovers the existence of the mine and sues for setting aside the sale. Can he succeed? Give reasons for your answer.

5. Write a short note on the doctrine of 'feeding the estoppel'.

A mortgages a property to B, representing himself to be the owner when he is in fact merely a reversionary heir expectant on the death of a Hindu widow in possession, C. B sues A on the mortgage and obtains a mortgage decree. After the decree C dies and A becomes the owner of the property. Can B sell the property under the decree?

6. 'In India the Legislature has abolished tacking.' Is there any exception to the general rule? Illustrate your answer.

7. State the facts and the point or points of decision of any one of the leading cases on the Law of Transfer -Inter vivos, which you have to read, and argue the case on behalf of the party who lost it.

Second Half

Examiners-- { Mr. SATYENDRAKISORE GHOSH, M.A., B.L.
.. BIKANBHARI MITRA, M.A., B.L.

1. A leased a house to B for residential purposes at a monthly rent from the 1st January, 1933, and without mentioning any period on the expiry of which the lease would terminate. A desires to get possession of the house from the 1st of March, 1934. What should he do for terminating B's lease for the purpose?

2. Explain and enunciate the principles laid down in the leading case of *Noakes v. Rice*, (1902) A.C. 24. Indicate how, and to what extent, this decision has been modified by *Kreglinger v. New Patagonia Meat and Cold Storage Co.*, (1914) A.C. 25.

3. A sells a plot of land to B, and there is a clause in the conveyance to the effect that a certain plot 'should never be hereafter sold, but should be left for the common benefit of both parties and their successors'. Discuss how far this clause would restrain the transferee in disposing of the plot thus agreed to be left in the state in which it was at the date of the conveyance.

4. Distinguish between a vested and a contingent interest.

A makes a gift to B for life and then to C. C died during the lifetime of B. What becomes of the gift to C?

Is there any difference in the rule of construction of conditions precedent and subsequent?

5. State the effect of non-registration of documents required to be registered under Section 17 of the Indian Registration Act. Will a registered bond relating to moveable property have priority over a prior unregistered bond relating to the same property? Give reasons for your answer.

6. Write a short note on the question as to how far registration operates as notice. Point out the effect of the amendments made in 1929.

7. *A* claims title to property under a registered conveyance from the owner. *B* claims title to the same property as purchaser at a sale held in execution of a decree obtained on a prior unregistered mortgage granted by the owner. Discuss the question of priority as between the two rival purchasers.

Or,

Discuss the principles enunciated in *Jadunath Poddar v. Ruplal Poddar*, I.L.R. 33 Cal. 461.

THIRD PAPER

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

First Half

Examiners— { DR. SASANKAJIBAN RAY, M.A., D.L.
MR. RAMENDRAMOHAN MAJUMDAR, M.Sc., B.L.

FIVE questions only are to be attempted.

1. Explain any three of the following :— 10
(a) Equitable waste, (b) Words of limitation, (c) Words of purchase, (d) Resulting Use, and (e) Leasehold.
2. What is the rule in Shelley's case? How far has the rule been affected by the Law of Property Act, 1925? 10

Or,

State clearly the rule against perpetuities. What are the exceptions to this rule?

3. Distinguish between a reversion and a remainder. How does a vested remainder differ from a contingent remainder? 10

Or,

Distinguish between the incidents of a legal tenancy in tail and of legal tenancy for life. What are the changes effected by the Law of Property Act, 1925, as to the creation of such estates?

4. In June, 1925, William conveyed the estate of Blackacre to John and his heirs; and in June, 1926, William conveyed the estate of Whiteacre to John without mentioning the heirs. What kind of interest did John acquire in each of the two estates? 10

5. State the facts and explain the principles involved in— 10
London and South Western Railway Co. v. Gomm, 20 Ch.D. 562.

Or,

Morley v. Bird, 3 Ves, 629 ; 4 R.R. 106.

Second Half

Examiners— { MR. J. BARUA, BAR-AT-LAW.
,, DHIRENDRAKRISHNA RAY, B.L.

FIVE questions only are to be attempted.

1. Explain any two of the following :— 10
(a) Privileged Wills, (b) Residuary legatee, (c) Election, (d) Ademption of legacies.

2. A Hindu by his will bequeaths his property to his wife. Discuss whether she takes an absolute or a limited estate. 10

Or,

A legacy is given to A or B. Both survive the testator. Discuss the effect of the bequest.

3. Explain the term domicile. How does domicile affect succession? How can domicile be acquired in British India? 10

4. In what cases may the grant of probate or letters of administration be revoked or annulled? Who can move in the matter? 10

Or,

Explain and illustrate (a) general legacy, (b) demonstrative legacy, and (c) specific legacy.

5. State the facts and explain the principles involved in— 10
Narendranath Sircar v. Kamalbashini, I.L.R. 23 Cal. 563 (P.C.).

Or,

Sailajaprasad Chatterjee and others v. Jadunath Bose, 21 C.L.J. 88.

FOURTH PAPER

The figures in the margin indicate full marks.

Only FIVE questions are to be attempted in EACH half.

First Half

Examiners—

MR. J. N. MAJUMDAR, M.A., B.L., BAR-AT-LAW.

DR. SUSILKUMAR DUTT, M.A., B.L., PH.D., BAR-AT-LAW.

1. 'Contract results from a combination of the two ideas of Agreement and Obligation.' (*Anson*.) Develop. 10

2. Compare Void and Illegal Contracts, with reference to their nature and legal consequences. 10

Or,

Give an account of the facts and decision in *Ledu Coachman v. Hira Lal Bose*, 21 C.L.J. 527.

3. 'A contract can not impose the burden of an obligation upon one who was not a party to it, yet a duty rests upon persons though extraneous to the obligation not to interfere without sufficient justification with its due performance.' (*Anson*.) Explain and illustrate this by reference, if possible, to some well known decided cases. 10

4. Summarize the rights and liabilities of the parties in cases of contract through agents where the principal is undisclosed. 10

5. A saves B's property from fire. Discuss the principles bearing on the question of A's right to claim compensation from B. 10

6. A goes to a book-seller, selects the books he wants, and the price is settled. It is arranged that A will send his servant to take delivery of the books and pay the bill within a week. The books are destroyed by an accident before the servant comes for the books. Who will bear the loss, and why? 10

7. A sells goods to X, being led to think that X is Y. X sells the goods to M, who is an innocent purchaser for value. Discuss the rights of A and M to the goods sold. 10

Second Half

Examiners—

MR. SAMADAS BHATTACHARYA, B.L.

MR. M. N. GHOSH, BAR-AT-LAW.

1. *A* advances Rs. 100 to *B* on pawn of a pair of gold bangles. *A* again advances Rs. 50 to *B* without specific mention of security. Both sums carry interest and are left unpaid on the stipulated dates. The total amount now due on the loans exceeds the value of the pledged bangles. Advise *A* as to how he should proceed to realize his dues. 10

Or,

A and *B* carry on business as bankers. A sum of money is received by *A* on behalf of the firm. *A* does not inform *B* of such receipt, and appropriates the money to his own use. Is the partnership liable to make good the money? Give reasons.

2. Define Tort, and distinguishing it from (a) Crime, (b) Breach of contract, and (c) Quasi contract, giving illustrations of each. 10

3. Explain and illustrate 'Contributory Negligence' and its effect on Torts. 10

Or,

Summarize the facts and ratio decidendi of *Glasgow Corporation v. Taylor*, (1922) 1 A.C. 44.

4. Discuss the constituent elements of Fraud as basis of an action for Deceit, and compare it with misrepresentation that would suffice to avoid a contract. 10

Or,

Give the substance of the facts and decision in *Derry v. Peek*, 14 App. Cases 337.

5. Discuss the question of *A*'s liability in any one of the following cases: 10

(a) *A* alleges that the officers of a Municipal Corporation are guilty of corruption and partiality in the discharge of their duties but is unable to substantiate his charges. The Corporation sues *A* for defamation.

(b) *A* informs the Police that his property has been destroyed by fire, and that he suspects his neighbour, *B*, with whom he has long standing enmity as the wrongdoer. *B* is sent up for trial by the Police and is acquitted by the Court. *B* sues *A* in damages for malicious prosecution.

July, 1934

FIRST PAPER

The questions are of equal value.

Candidates are required to give their answers in their own words as far as practicable.

First Half

Examiners- { MR. AMIN AHMED CHAUDHURI, M.A. LL.B., BAR-AT-LAW.
MR. WAHED HOSSAIN, B.L.

1. *Either,*
State the impediments of succession under the Muslim Law.

Or,

State the different sources of Muslim Law.

2. State briefly the Muslim Law relating to divorce.
3. Enumerate the rights and duties of the Mutwalli of a wakf under the Muslim Law.
4. State the essential conditions of (a) Hiba, (b) Hiba-bil-ewaz, and (c) Hiba-bil-shart-ul-ewaz, under the Muslim Law.
5. Discuss *one* of the following cases :—
(a) *Baker Ali Khan v. Anjuman Ara Begum*, L.R. 30 I.A. 94.
(b) *Enatullah v. Koorsher Ali*, 54 Cal. 266 S.B.

Second Half

Examiners- MR. A. QUASEEN, B.A., LL.B., BAR-AT-LAW.
MR. BIBHUTIRHUSAN BASU, M.A., B.L.

1. *Either,*
State the age of majority of persons domiciled in British India under the Indian Majority Act (Act IX of 1875).

Or,

Discuss the effect of the Indian Majority Act (Act IX of 1875) on the personal law of Hindus and Muslims.

2. Explain and illustrate the quasi legal proceeding called 'Petition of Right' under English Law.

3. Discuss the legal capacity in relation to marriage under English Law.

4. Enumerate the duties of guardians towards their wards under English Law.

5. Discuss *one* of the following cases :—

(a) *Abraham v. Abraham*, 9 M.I.A. 105.
(b) *Udny v. Udny*, L.R.Sc. and D. 441.

SECOND PAPER

The figures in the margin indicate full marks.

First Half

Examiners— { Mr. BIRAJMOHAN MAJUMBAR, M.A., B.L.
Mr. GOPALCHANDRA MUKHERJEE, M.A., B.L.

Answer ANY FIVE of the following.

1. State the rules in the Transfer of Property Act regulating the transfer of property to unborn persons. 10

2. What is the principle which is sometimes referred to as 'feeding the grant by estoppel'? 10

S, a Hindu, who has separated from his father F, sells to T three fields, X, Y, and Z, representing that S is authorized to transfer the same. Of these fields Z does not belong to S but belongs to F. On F's death, S obtains Z as heir. T never rescinded the contract of sale. Can T require S to deliver Z to him? Discuss.

3. A sued B for recovery of possession of some land and got a decree. During the pendency of the suit, B had sold the property to C. Can C re-open the questions already decided in the suit? Discuss. 10

4. Explain the doctrine of part performance as embodied in Section 53 A of the T.P. Act.

What elements must be present in order to attract the operation of the doctrine? 10

5. What is an onerous gift? 10

A minor is the donee of an onerous gift. After attaining majority, he retains the property given. Is he bound by the obligation with which the gift is burdened? Discuss.

6. What do you mean by 'Donatio mortis causa'? 10

What special cases of gift are exempted from the operation of Chapter VII of the T.P. Act?

7. What is an actionable claim? How is the transfer thereof effected? 10

8. Discuss the law as laid down in *Jadunath Poddar v. Ruplal Poddar*, 33 Cal. 967=4 C.L.J. 22. 10

Second Half

Examiners— { Mr. SANATKUMAR CHATTERJEE, M.Sc., B.L.
Mr. NARAYAN CHANDRA KAR, B.L.

Answer ANY FIVE of the following.

1. What do you mean by an English mortgage? Explain the points of difference between an English mortgage and a simple mortgage. 10

2. What are the rights of the mortgagor and the mortgagee as to accessions to mortgaged property?

X mortgages to Y a field on which there are no trees. Afterwards Y voluntarily plants trees upon it. On redemption, is X entitled to the trees? Is he bound to pay Y the costs of planting them? 10

3. Explain the doctrine of 'Marshalling of Securities.' Illustrate your answer. 10

4. Who are entitled to redeem a mortgage?
Can a Hindu widow's reversioner sue for redemption while she is alive? 10
5. When is a person said to have a charge on a property?
A mortgage deed which should have been registered is not registered. Can it operate as a charge? 10
6. Do the following documents require to be registered?— 10
(a) Authority to adopt when conferred by a nontestamentary instrument.
(b) Wills.
(c) Lease of immoveable property for six months.
(d) A deed of gift of immoveable property worth Rs. 50.
(e) A deed of appointment of a guardian.
7. What is the protection afforded by the Indian Registration Act to an oral agreement with possession when competing with a subsequent registered document? 10
8. Explain the principles laid down in *Kreglinger v. New Patagonia Meat and Cold Storage Co.* (1914) A.C. 25. 10

THIRD PAPER

The questions are of equal value.

First Half

Examiners— { MR. RAMENDRAMOHAN MAJUMDAR, M.Sc., B.L.
MR. ASOKCHANDRA DATTA, BAR-AT-LAW.

1. Define any two of the following:—
(a) Gavelkind, (b) Manor, (c) Equitable waste, (d) Estate *Pur autre vie*.

2. How do you distinguish between Real and Personal property? What are the different kinds of real property according to English law?

Or,

Classify the different kinds of Freehold Estate as they existed under English law, noticing the changes introduced by modern legislation.

3. Describe briefly the powers of a 'life tenant'. How were these powers enlarged by the Settled Land Acts?

Or,

Distinguish between joint tenancy and tenancy in common. Can a Court order sale in lieu of partition in a suit for partition?

4. Write a short note on 'Equitable interest'.

Or,

What is an Executory interest? Explain the principle that a limitation which can take effect as remainder should not be construed to be an executory limitation. Has this principle been affected by recent legislation?

5. State the facts and principle in *London South Western Railway Co. v. Gomm*, (20 Ch.D. 562).

Or,

Discuss how far the principle in *Walsh v. Lonsdale* applies to India.

Second Half

Examiners— { Mr. SUSILKUMAR BOSE, B.L.
Mr. M. N. GHOSH, BAR-AT-LAW.

1. What are the requisites as to (a) signature, and (b) attestation of an unprivileged will?

Or,

What are the rules of construction where two bequests are made to the same person by a will or a will and a codicil respectively?

2. State the nature of the interest in the testator's properties of the executor of a Mahomedan's will (a) before the Probate and Administration Act of 1881, (b) under the said Act, and (c) under the Indian Succession Act of 1925.

Or,

A Brahmin by his will appoints X as his executor and directs X (i) to spend Rs. 5,000 for *sradh* and other ceremonies on A's death, (ii) to set apart a fund of Rs. 10,000 to defray the expenses of A's *sradh*, year after year for ever, (iii) to spend the rest and residue of the estate for Dharma. Briefly discuss the validity of each of these provisions.

3. Distinguish between (a) vested legacy of which payment or possession is postponed, and (b) contingent legacy.

Or,

Briefly state the effect of grant of probate. May the validity of a will be questioned after grant of probate thereof?

4. Give the meaning of any four of the following:—

(i) Citation, (ii) Caveat, (iii) Contentious Case, (iv) an executor of his own wrong, (v) domicile of origin, (vi) ademption, (vii) administration pendente lite, (viii) administration bond.

5. State the facts and decision in *Bhagabati Barmanya v. Kalicharan Singh*, (32 Cal. 992).

Or,

Discuss the principle enunciated in *Bai Motibahu v. Bai Mamubai*, (21 Bom. 709).

FOURTH PAPER

Candidates are required to give their answers in their own words as far as practicable.

All questions carry equal marks.

Answer ANY FIVE questions from EACH half.

First Half

Examiners— { MAHIMAMUKUL HAJRA, B.L.
MR. BARENDNRANATH BOSE, BAR-AT-LAW.

1. At what point of time are (1) an offer, (2) an acceptance of an offer, and (3) a revocation of an offer, deemed to be made? Give illustrations.
2. Define 'consideration'.

State in what circumstances under Section 25 of the Indian Contract Act will an agreement without consideration be a valid contract.

3. Contracts in restraint of trade are void, subject to certain exceptions. What are these exceptions according to the Indian Contract Act?

4. State, giving reasons, how far the following agreements are lawful and/or enforceable:—

(a) An agreement between *A* and *B* that 'if *B* restores the value of the things taken, *A* will drop a prosecution which he has instituted against *B* for robbery.

(b) An agreement between *A* and *B* that one will not bid against the other at an auction sale.

(c) *A* agrees to buy from *B* a certain horse. It turns out that the horse was dead at the time of the bargain, though neither party was aware of the fact.

5. Explain: 'Time is of the essence of the contract'. What rules determine if time is of the essence of a contract?

6. Write short notes on (a) waiver, and (b) novation. Give illustrations.

7. Briefly state the facts and fully discuss the rule in *Hadley v. Barendale*.

Second Half

Examiners— { Mr. S. K. Mukherjee, M.A., B.L., M.L.C.,
Bar-at-Law,
.. Syamadas Bhattacharyya, B.L.

1. 'Just as there are cases in which damage is not actionable as a tort, so conversely there are cases in which an act is actionable as a tort, although it has been the cause of no damage at all.' Discuss and give illustrations.

2. 'The rule that it is for the plaintiff to prove negligence, and not for the defendant to disprove it, is in some cases one of considerable hardship to the plaintiff. . . . This hardship is avoided to a considerable extent by the rule of *Res ipsa loquitur*.' Discuss and give examples.

3. Explain clearly what is meant by *Volenti non fit injuria*.

4. Distinguish between a private nuisance and a public nuisance.

What are your remedies if you want to proceed against a public nuisance?

A man digs a trench across a highway. Under what circumstances can you, in your individual capacity, bring a suit against him?

5. A child of seven years of age lawfully entered a botanic garden maintained by the Municipality and was there poisoned by eating the berries of a poisonous shrub of tempting and innocent appearance.

Discuss the liability of the Municipality.

6. State the facts in and discuss the law laid down in *Jefferson v. Derbyshire Farmers, Ltd.* (1921) 2 K.B. 281.

7. (a) *A*, a tradesman, leaves goods at *B*'s house by mistake. *B* treats the goods as his own. Is *B* bound to pay for them?

(b) *A* saves *B*'s property from fire. Is *A* entitled to compensation from *B*?

Final Examination in Law,

January, 1934

FIRST PAPER

The figures in the margin indicate full marks.

First Half

Examiners— { MR. BIRAJMOHAN MAJUMDAR, M.A., B.L.
 " SURESCHANDRA BOSE, B.L.
 " GOPALCHANDRA MUKHERJEE, M.A., B.L.

Answer ANY FIVE of the following.

1. What do you mean by Badshahi and Non-Badshahi revenue free grants? How are they affected by the Regulations of 1793? 10
2. Does a co-sharer paying whole of the Government revenue acquire a charge on the estate? To what relief is he entitled? 10
3. A payment had been made by the proprietor of an estate expressly for the Kist due in January, 1902, and accepted as paid in respect of the Kist. The Treasury Officer, however, applied a part of it to the satisfaction of an earlier Kist due in September, 1901, and the remainder was appropriated towards the payment of the January Kist, with the result that an arrear was created in the January Kist and the estate was sold. Was the Collector justified in setting off the amount paid as against the earlier arrears due? Discuss. 10
4. In a Putni lease there was a stipulation that by reason of non-payment of rent by the putnidar, the tenancy would be forfeited. Discuss the validity of such a stipulation. 10
5. What is the procedure laid down in Reg. VIII of 1819 for the summary sale of a Putni tenure? 10
6. Who is entitled to get an island chur thrown up in a public navigable river? 10
7. Discuss the principles laid down in *Srinath Roy v. Dinabandhu*, I.L.R. 42 Cal. 489. 10

Second Half

Examiners— { MR. SANTOSHKUMAR PAL, B.L.
 " PRAPHULLACHANDRA GHOSH, B.L.
 " RABINDRANATH CHAUDHURI, M.A., B.L.

Answer ANY FIVE of the following.

1. 'All settled raiyats are occupancy raiyats but all occupancy raiyats are not necessarily settled raiyats.' Explain fully. 10
2. What are the conditions under which a valid deposit of rent can be made in Court? 10
3. Who can make the deposit? Is it necessary that the person making the deposit must be the registered tenant? 10
4. What are the grounds upon which a landlord can institute a suit for enhancement of rent of an occupancy holding? 10
5. What is the law relating to the transferability of occupancy holdings at the present day? 10

5. In a permanent *Mukarari* lease, granted by the holder of a permanent tenure sometime in 1920, there was a reservation of a high rate of interest at 75 p.c. per annum on all arrears of rent. Can the stipulation be enforced against the lessee at the present day? Discuss. 10

6. What do you mean by an easement being continuous or discontinuous? Illustrate your answer. 10

7. State and discuss the Full Bench Decision in the case of *Chandra Kant Nath v. Amjad Ali*, I.L.R. 48 Cal. 783. 10

SECOND PAPER

The questions are of equal value.

First Half

Examiners— { MR ASOKACHANDRA DUTT, BAR-AT-LAW.
 „ SACHINDRAKUMAR GUHA, BAR-AT-LAW.
 „ AZIZ RAHIM, M.A., BAR-AT-LAW.

Answer ANY FOUR questions.

1. 'Equity had not come to destroy law but to fulfil it.' Expand.
2. Trace the history of the Courts of Equity down to 1873.
3. Write brief notes on any two of the following: (i) Use, (ii) Precatory trust, (iii) Equitable waste, (iv) Ellesmere.
4. By what tests do you determine that equitable estates and interests are or are not *jura in rem*?
5. Write a short note on 'constructive notice'.
6. State what you know of *Maddison v. Alderson* (L.R. 8 A.C. 473), and examine if it has been assimilated into the law of British India to any extent.
7. 'Restrictive covenants run with the land in equity.' Explain and criticize.

Second Half

Examiners— { MR. P. MITTER, M.A., BAR-AT-LAW.
 „ BARENDRANATH BOSE, M.A., BAR-AT-LAW.
 „ ABUL HOSSAIN, M.A., M.L.

Answer only FOUR questions.

1. Enunciate and annotate any one of the leading maxims of Equity.
2. Define Election, and enumerate the conditions under which it arises. Give a few cases to support your conclusion.
3. In what ways do benami transactions in India resemble and differ from the English resulting trust? Refer to leading cases.
4. 'An executor or administrator as such is not a trustee for the legatees or the next of kin.' How do you account for this proposition, having in view the definition of 'trust' and the position of the individuals in question?
5. Compare the law relating to mortgage by deposit of title deeds as it obtains in India and in England.
6. Who are express trustees? Is a Shebait or Mohunt one? How has the position been affected by legislation in India?
7. What is the decision in *Stapilton v. Stapilton* (1 Atk 2)? What application has it had in British India?

THIRD PAPER

The questions are of equal value.

Only FIVE questions to be attempted in EACH half.

First Half

Examiners— { Mr. MONMOTHONATH RAY, M.A., B.L.
 „ RATANMOHAN CHATTERJEE, M.A., B.L.
 „ BYOMKES BOSE, M.A., B.L.

1. Write a note on the relevancy of evidence, giving illustrations.
2. Under what circumstances may statements by persons who cannot be called as witnesses be admitted in evidence?
3. What do you understand by secondary evidence? Under what circumstances may secondary evidence be given?
4. A notice to quit by a landlord to a tenant was given by registered post, but the letter containing the notice was returned to the landlord as a letter which the tenant had refused to accept. Discuss, giving reasons, whether, under the Indian Evidence Act, any presumption arises that the letter containing the notice reached the tenant, and whether the fact that the letter was returned by the post office as not accepted by the addressee affects the presumption.
5. 'The term "intentionally" was used in Section 115 of the Indian Evidence Act for the purpose of declaring the law in India to be precisely that of the law of England.' Discuss by reference to the facts of a leading case, and point out the main question in determining whether estoppel has been occasioned in any particular case.
6. Discuss the circumstances under which (i) fraud, and (ii) payment of interest or part of principal of a debt, would extend the period of limitation under the Indian Limitation Act.
7. 'Except perhaps in cases where injustice has been occasioned by a Court by its own acts or oversights, there is no scope for the application of any principles of equity in the administering of the statutes of limitation.' Discuss by reference to the facts of a leading case.

Second Half

Examiners— { Mr. NURUL HUQ CHAUDHURI, B.L.
 „ PRAPHULLACHANDRA CHAKRABARTI, M.A., B.L.
 „ ANITKUMAR HAZRA, BAR-AT-LAW.

1. 'The distinction between existence of jurisdiction and exercise of jurisdiction has not always been borne in mind, and this has sometimes led to confusion.' Discuss by reference to the facts of a leading case.
2. A sued to eject B, alleging that B was an underraiyat and had been served with notice to quit. The defence was that B was not an underraiyat but a raiyat with a right of occupancy, and that the notice was insufficient. It appeared that previously A brought a suit to eject B, alleging that neither B nor his father, who was then dead, had any tenancy right and was a trespasser. It was found in that suit that B was a tenant and not a trespasser, and the suit was dismissed. In that suit, A did not make any alternative case that, even if B's father was a tenant, the tenancy being underraiyati, B could not inherit and was therefore a trespasser. In that suit, the status of B was not decided. Discuss, giving reasons, whether the subsequent suit is barred by *res judicata*.

3. Discuss, giving reasons, whether the purchaser at an auction-sale of the equity of redemption in mortgaged properties can come in in execution proceedings under a decree upon the mortgage as a representative of the judgment-debtor under Section 47 of the Code of Civil Procedure.

4. Write a short note on the properties which can be attached or sold in execution of a decree, indicating the nature of the properties not liable to such attachment or sale and the reasons for such exemption.

5. What is the special procedure to be followed when it is proposed to sue the Secretary of State for India in Council?

Under what conditions may a defendant claim a set-off?

6. Under what circumstances may a sale in execution of a decree be set aside at the instance of—

(a) the decree-holder;

(b) the judgment-debtor; and

(c) the auction purchaser?

7. After a decree was passed, an application for review was made and granted; but when the case was reheard on the merits, the Court found that there was no ground for interfering with the previous judgment, and a new decree was passed, which had the effect of affirming the previous decree. Discuss, giving reasons, whether an appeal against the decree anterior to the review, filed pending the review, is competent, in the absence of an appeal against the new decree.

FOURTH PAPER

Answer ANY FIVE questions from EACH half.

First Half

Examiners— { Mr. S. P. MOOKERJEE, M.A., B.L., BAR-AT-LAW, M.L.C.
 „ MONI BANERJEE, BAR-AT-LAW.
 „ S. P. Ray, BAR-AT-LAW.

1. Discuss the following proposition :—

‘No one is a criminal unless he has *mens rea*.’

2. Discuss briefly the right of private defence of the body.

A, an armed police officer, attempts to arrest B under a warrant issued by a competent authority. Can B have any right of private defence against A under any circumstance?

3. Write short commentaries on two of the following offences :—

(i) Rioting, (ii) Forgery, (iii) Defamation.

4. A is on his trial for receiving stolen property. What facts must be proved to establish guilt? What defence can A take up?

5. Do you know of any offence under the Indian Penal Code for which there is no other sentence than death? If so, what is it?

Discuss how far age is relevant on the question of criminal liability.

6. Has any offence been committed, and, if so, what, in each of the following cases?—

(a) B, by threats of death, induces A to do an act to enable B to commit murder.

(b) A assault a man, believing him to be a ghost and the assault proves fatal.

(c) A instigates B to kill C. B accordingly shoots at C but C is not hurt.

(d) A willage doctor, uneducated in matters of surgery, operated on a patient for internal piles by cutting them with an ordinary knife. The patient died of hæmorrhage.

7. Discuss the case of *Queen Empress v. Bal Gangadhar Tilak* (I.L.R. 22 Bom. 112).

Second Half

Examiners— { Mr. BANBIHARY DAS, M.A., B.L., BAR-AT-LAW.
 „ BIRBIHUSAN DUTT, M.A., B.L.
 „ MANINDRANATH BANERJEE, B.L.

1. Define 'complaint', 'Summons case', 'Warrant case'. Give in brief the chief points of difference in the procedure of a trial of a summons case and a warrant case.

2. How many classes of Criminal Courts are there in British India? What are the sentences which each of these classes of Courts can pass?

3. (a) How can a previous conviction or acquittal be proved?

(b) When a Court convicts an accused person, can it pass any other order than sentencing him to punishment? If so, what order can it pass, and under what circumstances?

4. Distinguish between the dismissal of a complaint, the discharge of an accused person, and the acquittal of an accused person. What remedies, if any, are open to an aggrieved party in each of these cases?

5. What are the respective duties of the Judge and the Jury in a Sessions trial held with the aid of a Jury? What procedure may the Judge adopt if he disagrees with the Jury?

6. What is meant by the framing of a charge at a criminal trial, and what is its scope and object? To what extent does the law tolerate a defective charge?

7. Discuss briefly the principles deducible from the case of William Dove.

July, 1934

FIRST PAPER

The questions are of equal value.

First Half

Examiners— { Mr. RAMAPRASAD MOOKERJEE, M.A., B.L.
 „ HARIDER CHATTERJEE, M.A., B.L.
 „ MAHENDRANATH BAGCHI, M.A., B.L.

Candidates are required to answer ANY FIVE of the questions in this half.

1. Discuss briefly the merits and demerits of the Permanent Settlement of 1793.

Or,

State in brief the position of Zamindars in Bengal before the Permanent Settlement of 1793, and trace the growth of their power under the British rule.

2. Explain the difference between *Badshahi* and *Non-Badshahi* *Lakheraj* grants.

3. What do you understand by the expression 'reformation in situ'?

When a piece of land belonging to A is diluviated and afterwards reappears in front of B's land as an accretion, who is entitled to claim it? Discuss with reference to a leading case.

4. A, the owner of Zamindari, creates a tenure in favour of B and subsequently grants a Patni tenure in favour of C. A puts C's Patni tenure to sale under the Patni Regulation. D purchases it. Is D entitled to annul B's tenure? Give reasons for your answer.

5. Discuss, with reference to leading cases, the respective rights of the Zaminder and the Patnider in *Chowkidari chakran* lands upon their resumption.

6. 'The fish follow the river, and the fisherman follows the fish.'

Discuss with reference to a leading case.

7. On what ground can a revenue sale be set aside?

An estate was sold for arrears of revenue when no such arrears existed. The sale was regularly conducted and the purchase was made *bona fide*. An appeal was taken to the Commissioner of Revenue who, however, refused to interfere. What advice would you give to the aggrieved party as to any other remedy that may be open to him?

Second Half

Examiners— { MR. GOPENDRANATH DAS, M.A., B.L.
 „ PRAMATHANATH MITRA, B.L.
 „ JATINDRANATH CHAUDHURI, M.A., B.L.

Candidates are required to answer Question 8 and EITHER Question 6 OR 7; and ANY THREE of Questions 1 to 5.

1. 'The conferment of the right of transferability on the occupancy raiyat by the Bengal Tenancy Amendment Act, 1928, has really been an infringement by the legislature of the absolute proprietary right conferred on the Zamindars by the Permanent Settlement of 1793.' Discuss.

2. State the present law relating to the transferability of an occupancy holding, and compare it with the law under the previous Act and the decision in *Chandrabhinod v. Alabur*, 31 C.L.J. 510.

3. What remedies are open to a tenant in case the soil of the holding has permanently deteriorated? How would you advise the tenant where the landlord has dispossessed him from a portion of the holding? What will the tenant have to prove in the two cases?

4. 'Rent is a first charge on a tenure or holding.' Explain and discuss with reference to a leading case on the subject.

5. What do you understand by 'protected interests' and 'incumbrances' under the Bengal Tenancy Act?

How would you advise the purchaser at a rent sale to proceed when an occupancy raiyat had mortgaged the holding before the rent sale?

6. 'There may be as many kinds of servitude as there are ways whereby the liberty of a house or tenement may be restrained in favour of another tenement. But it must not be supposed that incidents of a novel kind can be devised and attached to property at the fancy or caprice of any owner.' Explain with illustrations.

7. Distinguish between an easement and a license.

Discuss the principle enunciated in *Maharani Rajroop Koer v. Abdul Hossein*, L.R. 7 I.A. 240.

8. Discuss the elements required for the acquisition of easement right under Section 26 of the Indian Limitation Act.

SECOND PAPER

The figures in the margin indicate full marks.

In EACH half answer Question 6 and 7, and ANY THREE of the remaining questions.

Candidates are expected to give reasons for all their answers.

First Half

Examiners— { Mr. K. P. BOSE, BAR-AT-LAW.
 „ S. C. CHAUDHURI, M.A., LL.B., BAR-AT-LAW.
 S. D. BANERJEE, BAR-AT-LAW.

1. Is it correct to-day to say that Equity is 'supplementary law'? Give reasons. 10
2. What do you understand by the expression 'Resulting Use'? In what way was the doctrine of Resulting Use invoked in former years? 10
3. What are Precatory Trusts? Give illustrations. 10
4. In what cases will a Court give relief against forfeiture? 10
5. Define, as far as possible in your own words, 'Charitable Trust'.
 A testator bequeaths funds for the future benefit of his soul by providing for masses after his death. Is it a good disposition? 10
6. A sum of Rs. 10,000 is invested in the firm of T. and Sons in trust for B. Subsequently, the firm of T. and Sons becomes insolvent, and its assets vest in the Official Assignee. Is B entitled to follow the trust funds and get a first charge for his Rs. 10,000 on the assets in the hands of the Official Assignee? Give reasons. 10
7. Deal briefly with the case of *Allcard v. Skinner*. 10

Second Half

Examiners— { Mr. P. MITTER, M.A., BAR-AT-LAW.
 „ HARIPRASANNA MUKHERJEE, M.A., B.L.
 „ PHANIBHUSHAN CHAKRABARTI, M.A., B.L.

1. What are the guiding principles adopted by a Court when issuing Injunctions? Give examples. 10
2. Define 'Election'. Upon what principle of justice is the doctrine of election founded? Give illustrations. 10
3. Write short notes on *any two* of the following:— 10
 - (i) Conversion.
 - (ii) Ademption.
 - (iii) Personal action on covenant.
4. 'He who seeks equity must do equity.' Discuss this maxim, giving illustrations. 10
5. Can a purchaser of land be compelled to accept a title in respect of which an arguable question may have to be decided? State your reasons. 10
6. Discuss the case of *Maddison v. Alderson* or that of *Peary Mohon Mukherjee v. Manohar Mukherjee*. 10
7. A enters into a contract with B, the manager of a theatre, to sell him a plot of land. C undertakes to build an up-to-date theatre on the land for B and to secure a set of artists to run the theatre. B pays both A and C in advance. Can he specifically enforce his contracts against A and C? State reasons. 10

THIRD PAPER

The questions are of equal value.

Only FIVE questions to be attempted in EACH half.

First Half

Examiners— { Mr. MANMATHANATH RAY, M.A., B.L.
 „ MUKUNDABIHARI MALLIK, M.A., B.L.
 „ TARADAS DATTA, M.A., B.L.

1. 'With respect to the character of parties to a cause, the law of England meets the difficulty by taking a distinction between cases where their character ought to be supposed to be in issue, and where it ought not.' Discuss and amplify with illustrations.

2. What do you understand by 'admissions'? What is the value of an admission in the proof or disproof of a fact?

3. Discuss the rule as to the exclusion of oral evidence to contradict, vary, add to or subtract from the terms of a written document. Is oral evidence admissible to prove discharge of a mortgage debt by payment of a portion of the mortgage debt and relinquishment of the balance? Discuss.

4. Explain the doctrine of estoppel, and discuss whether a mortgagor who admits the execution of a mortgage bond is estopped from proving that the document was not a valid mortgage according to law.

5. Is the cross-examination of a witness to be confined to facts to which he testified on his examination in chief? How is a witness protected against improper cross-examination?

What are leading questions? When may they be asked?

6. Discuss the requisites of a valid acknowledgment which would give a fresh start of limitation under the Indian Limitation Act.

Explain the effect of the addition of a new plaintiff during the pendency of the suit on the question of limitation for the suit.

7. 'There can be no continuance of adverse possession, when the land is not capable of use and enjoyment.' Discuss by reference to the facts and the decision of a leading case.

Second Half

Examiners— { Mr. BHUPALCHANDRA RAYCHAUDHURI, M.A., B.L.
 „ NURUDDIN AHMED, B.L.
 „ B. M. MANDAL, BAR-AT-LAW.

1. 'The Civil Procedure Code is not exhaustive of the circumstances in which an issue is *res judicata*, and the plea of *res judicata* still arises, apart from the limited provisions of the Code.' Explain and discuss.

2. Write a short note on the provisions of the Civil Procedure Code regulating the venue of a suit.

3. What are the questions triable exclusively by the executing Court, and not by a separate suit? Discuss whether a private transferee from a decree-holder auction-purchaser is his representative in interest within the meaning of Section 47 of the Civil Procedure Code.

4. State the necessary contents of a plaint. What do you understand by issues in a suit? How are they framed?

5. After an appeal was heard, the Subordinate Judge fell ill and did not attend Court, but he wrote and signed the judgment of reversal at home, and made it over to his bench clerk for communication to the parties. The judgment was communicated to the pleaders of the parties.

Discuss whether the judgment is one according to law, and whether the irregularity, if any, afforded ground for reversal of the decree based on the judgment. Give reasons, and point out the relevant provisions of the Code.

6. What are the conditions necessary for (i) the issue of a temporary injunction, and (ii) the appointment of a Receiver?

7. State the grounds on which an award may be (i) modified or corrected, (ii) remitted, and (iii) set aside.

FOURTH PAPER

The figures in the margin indicate full marks.

First Half

Examiners-- { MR. J. BARUA, BAR-AT-LAW,
 ,, DINESCHANDRA RAY, M.A., B.L.
 ,, NURUL HUQ CHAUDHURI, M.A., B.L.

Four questions out of the first five and the sixth to be answered.

1. Define: 'moveable property', 'counterfeit', 'valuable security', and 'document'. 10

2. Distinguish between 'affray' and 'riot'. 10

What are the acts against which there is no right of private defence?

3. What offence has A committed in the following cases?— 10

(a) Z, a mad man, attempts to kill A with a sword. Before he is struck, he kills Z.

(b) A instigates B to instigate C to kill Z. B instigates C to kill Z, and C kills Z in consequence of B's instigation.

(c) A having pawned his watch to Z takes it out of Z's possession without Z's consent, not having paid what he borrowed on the watch.

(d) Z dictates his will to A. A intentionally writes down a different legatee from the legatee named by Z and, by representing to Z that he has prepared it according to his instruction, induced Z to sign the will.

4. (a) Distinguish between 'Theft', 'Robbery', and 'Dacoity'.

(b) A, a creditor, took away moveable property out of his debtor's possession without his consent with the intention of coercing him to pay his debt. Has A committed any offence?

Discuss the point by citing any case or cases that you have read. 10

5. Discuss briefly the principles deducible from the case of *Q.E. v. Abbas Ali Serang*. 10

6. What is meant by 'Mens Rea' in English Criminal Law? Indicate the principle from the case of *William Dove*? 10

Second Half

Examiners— { Mr. A. S. M. AKRAM, M.A., B.L.
 ,, AMARENDRANARAYAN BAGCHI, M.A., B.L.
 ,, BANKIMCHANDRA RAY, M.A., B.L.

1. Define: 'Complaint', 'Summons case', 'Warrant case'. 10
 Give in brief the chief points of difference of procedure in the trial of a summons case and warrant case.

2. When can a police officer arrest a person without a warrant? 10

Or,

How many classes of Criminal Courts are there in British India? What are the sentences which each of these classes of Courts can pass?

3. Does an appeal by *A* lie and, if so, to whom?— 10

(a) *A* has been convicted by a District Magistrate under S. 124A and sentenced to one year's rigorous imprisonment.

(b) *A* has been sentenced to 3 years' rigorous imprisonment by an Assistant Sessions Judge.

(c) *A* has been tried by a second class Magistrate and sentenced to pay a fine of Rs. 30.

(d) *A* has been tried by a first class Magistrate and sentenced to pay a fine of Rs. 50, in default to suffer 1 month's rigorous imprisonment.

4. Discuss briefly the principles deducible from either of the cases:—

Abdul Rahman v. K.E., 54 I.A. 96.

Begu v. K. E., I.A. 52, page 191.

10

5. What are the respective duties of the Judge and Jury in a Sessions trial held with the aid of a Jury? 10

Or,

What would the presiding Judge in a Sessions trial do when the verdict of the Jury is five against four in the High Court and in a Mofussil Court?

M. L. Examination, 1934

JURISPRUDENCE AND PRINCIPLES OF LEGISLATION

Examiner—THE HON'BLE MR. JUSTICE DWARKANATH MITTER, M.A., D.L.

The figures in the margin indicate full marks.

1. 'Rights may be regarded under two aspects, either as at rest or as in motion.' (Sir Thomas Holland.) Expound. 20

2. According to Mr. Justice Holmes, a contract may be regarded as 'the taking of a risk'. Comment on this. Give Savigny's analysis of a contract. In what point is this analysis open to criticism? 20

3. 'The criminal law stands to the passion of revenge in much the same relation as marriage to the sexual appetite.' (Sir James Stephen—quoted by Mr. Justice Holmes.) Develop and state other views. 20

Or,

Discuss in the manner of Bentham the question of Capital Punishment.

4. Contrast the views of Savigny and Jhering on the theory of Possession. Give the view of Mr. Justice Holmes on the subject. 20

5. Write a short thesis on the nature of an 'artificial person', the mode in which it may come into existence, and the rights and liabilities which may be attributed to such an entity, dealing with the subject both from theoretical and practical point of view. 20

Or,

(a) The movement of progressive Societies has hitherto been a movement from Status to Contract. (Maine.) Discuss.

(b) 'Now the penal law of ancient communities is not the law of crimes, it is the law of wrongs or, to use the English technical word, of torts.' (Maine.) Expand.

HINDU LAW

Examiner—THE HON'BLE MR. JUSTICE MANMATHANATH MUKHERJEE, M.A., B.L.

The figures in the margin indicate full marks.

1. Discuss briefly the conception of 'ownership' according to Hindu law.

Is the idea of 'property' exclusively indicated in the Shastras, or is it a matter of popular recognition only?

Discuss the views of different commentators regarding the extinction of ownership by adverse possession. 20

Or,

'In Hindu Law, on the whole, the largest space is devoted to contract.' Explain.

Give a short account of the rules of Hindu Law relating to (a) Usury, (b) Suretyship, (c) Partnership, and (d) Agency.

2. 'A Hindu widow adopts not in her own right but as a delegated agent of her husband.' Justify or criticize.

Discuss, with reference to leading cases, how far the widow's right to adopt is dependent on the vesting of property in her. 20

Or,

Summarize the arguments of Jimutavahana in refutation of the doctrine that the son acquires by birth an interest in the property of his father.

3. 'In the history of the word "Sapinda" is wrapped up the whole law of inheritance.' Explain. Discuss, with reference to leading cases, the connection between *Pinda* and propinquity according to Hindu Law. 20

Or,

Trace the development of the law relating to the liability of the son to pay the debts of the father. State what is meant by the expression 'antecedent debts'.

4. What, according to Smriti texts, are the rights of a Hindu widow in property inherited by her from her husband? How far have these rules departed from in modern judicial decisions? 20

Trace critically the definition of 'Stridhan' as given by Jimutavahana. Point out how Mitakshara differs from Dayabhaga as regards the interpretation of texts relating to succession to the property of a childless woman.

5. 'In an impartible estate there is no coparcenary.' Discuss this proposition with reference to the leading cases on the subject. 20

Or,

How far can the position of a 'shebait' be compared with that of a trustee under the English law? Is shebaitship a property, and does the rule in *Tagore v. Tagore* apply to the rules relating to succession thereof?

MUHAMMADAN LAW

Examiner—SIR Z. R. Z. SUHRAWARDY, KT., M.A., B.L., BAR-AT-LAW.

The questions are of equal value.

1. Discuss the means adopted by the several schools of Muhammadan Law to relax its rigidity.

2. Trace from the earliest times the various enactments vouchsafing personal law to the Muhammadans in the Presidency towns and in the mufassil. Prove or disprove if the law of wakf is included in the personal law.

3. Examine the views of the several High Courts regarding the rights of a creditor of a deceased Muhammadan *vis-a-vis* an heir who was not a party to the creditor's suit. State the logical basis of the different views.

4. What is the shortest period after marriage when a child must be born to establish its paternity according to the Hanafi and Shia law in the case of (a) a *sahih* marriage, (b) a *fasid* marriage? When must a child be born after dissolution of marriage to raise presumption of legitimacy? Discuss critically how the Muhammadan Law on the above points is affected by the rules of the Indian Evidence Act and which law should prevail.

Or,

What are the requisites of a valid acknowledgment? How does acknowledgment differ from adoption and legitimation? Compare the later Privy Council rulings with the earlier cases.

5. Distinguish between *batil* and *fasid* marriages with illustrations and the legal effect of each on the progeny. To which category would you put the following cases of marriage, and why?—

- (a) of a man with an *akl-i-kitab*,
- (b) of a woman with an *akl-i-kitab*,
- (c) with an infidel,
- (d) without the presence of witnesses,
- (e) without a dower,
- (f) during the period of *iddat*.

Or,

Explain, with examples, where necessary—

istihsan, *ijtihad*, *Khiyar-ul-bulugh*, *Khilwat-us-sahih*, *tafwiz-ut-talaq*, *hizanat*, *awl*, *radd*, *ariat*, *sadaka*.

PRINCIPLES AND HISTORY OF ROMAN LAW

Examiner—DR. S. C. BAGCHI, B.A., LL.B., LL.D., BAR-AT-LAW.

The questions are of equal value.

N.B.—FOUR questions only and no more need be attempted.

1. Give a brief history of the codification undertaken by Justinian. What were the Emperor's instructions to his commissioners as to the materials to be used and the methods to be adopted?

2. 'There are parts of the Roman Law which we undoubtedly have made part of our own law, and they are binding on us, not because they are part of the Roman Law, but because they have become part of our law. To quote it as an authority, we must show that it has become part of our jurisprudence.' (*Lord Halsbury.*) Discuss this remark, and show its bearing on the place of Roman Law in modern practice.

3. What was *actio noxalis*?

A, a Roman slave, knowing that his master B is about to sell him next day in the local market, places poisonous herbs amongst the fodder in B's cow-house, and pockets money belonging to the *peculium* of C, a fellow-slave. D buys A in the market where B warrants him honest and hard working. A week later, several of B's cows eat the fodder and die, and C misses the money. B demands that D shall either surrender A to him or both refund the stolen money and pay the value of the poisoned cattle. D refuses either to surrender or pay, and institutes a penal action against B for giving a false warranty. Supposing the events took place in Justinian's time, discuss the rights and liabilities of A, B, C, and D.

4. A dramatic society engages a Roman theatre for a week in June for the performance of a specified play which has already been licensed by the proper authorities. A sum of 2,000 *solidi* is to be paid for the use of the theatre, half on the 1st May and the balance on the 1st July. The licence for the play is revoked on the 31st of May, and the theatre is destroyed by fire on the 15th of June. Advise as a Roman lawyer of the 5th century A.D.

5. What was the law regarding the *Adpromissores* in the time of Justinian?

'We have seen that *sponsores* and *fide-promissores* had a means of recovering from their co-sureties what they had been made to pay in excess of their share.' (*Buckland.*)

What were the ways of recovering the excess paid? Did *lex Appuleia* apply at any time to *fide-i-jussores*?

6. Write a short essay on Juristic persons in Roman Law.

LAW OF CONTRACTS AND TORTS

Examiner—THE HON'BLE MR. JUSTICE MANMATHANATH MUKHERJEE, M.A., B.L.

The questions are of equal value.

Only THREE out of the questions in Group A, THREE in Group B, THREE in Group C, and the question in Group D need be attempted.

Group A

1. What is the rule in *Hadley v. Baxendale*? Explain the important points in it by suitable illustrations.

Does the rule apply, and, if so, to what extent, to contracts for the purchase of immoveable property (a) under the English Law, or (b) under the Indian Law?

2. Give a succinct statement of the law of British India as regards (a) Devolution of joint liabilities, (b) Right of one joint promisor against another to compel contribution, and (c) Effect of release of one of several joint promisors.

Is there any difference between the Indian and the English Law in respect of any of the above three matters? If so, on what points?

3. 'Knowledge of an Agent is equivalent to that of the Principal.' What, if any, are the limitations and exceptions to this rule? Discuss and give illustrations.

4. What considerations and objects in respect of agreements are lawful and what not, under the Indian Contract Act?

State concisely the points, if any, on which any of them differ from the English law.

5. State the rules of law about the rights and liabilities of undisclosed Principals as regards contracts entered into by their Agents.

Group B

1. Discuss the doctrine of 'Part Performance' under the English law. Give your own opinion, supported by reasons or decisions, as to the applicability of this doctrine in British India.

2. Explain and illustrate the doctrine of 'Mutuality'. How far has it been recognized by the Indian Specific Relief Act?

3. What is meant by saying that—

(a) Specific Relief is discretionary;

(b) No Court shall make a declaration that a person is entitled to any property where the plaintiff being able to seek further relief than a mere declaration of title omits to do so?

Illustrate your answers suitably.

4. Write a short note on the law as to specific performance of contracts relating to contingent interests and expectancies. Give some illustrations.

5. 'The Court will not, as a general rule, compel specific performance of a contract unless it can execute the whole contract.' Discuss.

Group C

1. 'The law as to boycotting is in a state of chaotic uncertainty.' Explain the present state of the law on this subject in England, with special reference to *Quinn v. Leatham* and *Sorrell v. Smith*.

2. 'A master is liable for any tort committed by his servant while acting in the course of his employment.' Discuss.

3. In what circumstances is the causing of bodily harm to another an actionable wrong, and in what not?

4. Write a short note on the law of torts relating to Nuisance.

'The right to commit a nuisance may be acquired by prescription.' Is the proposition correct? Discuss.

5. Give a list of the various remedies in cases of torts.

Explain the rule as to 'direct causation' as regards damages in an action for tort.

Group D

State the principles laid down in any leading case on *any two* of the following :—

- (a) Breach of rights of reputation.
- (b) Diminution of ancient lights.
- (c) Undue influence.
- (d) Discharge of contract by a new agreement.

EQUITY

Examiner—MR. H. D. BOSE, BAR-AT-LAW.

Candidates are required to answer only FOUR questions.

They are expected to refer to leading cases both English and Indian.

The questions are of equal value.

1. State the facts and the principles enunciated in *any three* of the following cases :—

- (a) *Kreglinger v. New Patagonia Meat Co.*
- (b) *Wallis v. Smith.*
- (c) *Mahomed Musa v. Aghore Kumar Ganguly.*
- (d) *Keech v. Sandford.*
- (e) *Pledge v. White.*
- (f) *Chesterfield v. Jansen.*
- (g) *Speight v. Gaunt.*
- (h) *Dowse v. Gorton.*

2. Discuss the subject of Precutory Trusts.

3. Explain :—

The application of *cypres* Rule to charitable trusts.

4. Distinguish a mortgage from a sale with an option to repurchase.

Or,

Explain the doctrine of merger of charges.

5. Discuss concisely and briefly the respective influences of Lord Hardwicke, Lord Eldon, and Sir George Jessel (M.R.) in the development and elucidation of Equity.

6. Summarize—

the law on the disposition of the goodwill of a business ;

Or,

Equitable Conversion ;

Or,

the rules in respect of the construction of Executed and Executory Trusts.

7. Elucidate the doctrine of Part Performance.

8. State briefly the doctrine of Purchaser for value without notice.

Or,

The distinction between 'Penalty' and 'Liquidated damages'.

9. When is a stranger to a trust estate liable and accountable as a Constructive Trustee?

THE LAW RELATING TO TRANSFER OF PROPERTY AND THE LAW OF PRESCRIPTION

Examiner—SIR LALGOPAL MUKHERJEE, KT., B.A., LL.B.

The questions are of equal value. 10 marks are reserved for neatness of handwriting in the answer paper and for style.

ANY FOUR questions out of the first eight questions may be attempted. The Question 9 and 10 must be attempted.

1. (a) Define 'Transfer of Property'.
(b) Can an owner of property transfer it to himself? If so, under what circumstances?
(c) Explain why a mere right to sue is not allowed to be transferred.
2. State the rule or rules against perpetuity and the exceptions (if any) to them. Give the principles underlying the said rules.
3. State and discuss the law of Election.
4. What are remote contracts? Give an example, and discuss the law on the subject, noticing any difference of opinion that may exist on the point among the High Courts in India.
5. A agrees in writing to sell to B his house in Calcutta for Rs. 15,000, and receives Rs. 1,000 as earnest money. What interest, if any, does B acquire by the transaction in the house, prior to the registration of the sale deed? Is there any difference on the point between the laws of India and England?
6. A holds B's property under a usufructuary mortgage, by which the former is to hold the property till the principal amount and the interest are satisfied out of the usufruct. B institutes a suit for recovery of the property on the ground that the entire debt has been satisfied. The Court finds, on an account being taken under its orders, that the entire mortgage money has not been paid off. What decree should the Court pass? Give your reasons for the answer.
7. How are the laws of 'subrogation' and 'contribution' related? Discuss the principles underlying each.
8. (a) How can a lease of immovable property be created?
(b) How does a lease of immovable property terminate?
9. A exercises openly and peacefully a right of way to his house over the outer courtyard of B's house for thirty years, and then dies. A's heirs do not occupy the house for five years. When they have occupied it for 3 years, and have used the way for the said period, B obstructs them in the use of the way. A litigation follows. Who should succeed and why?
10. (a) A borrows Rs. 500 from B on a promissory note payable on demand on 1st January, 1930. Nothing is paid by B towards the debt till 7th January, 1934, when the whole of the debt is satisfied. B then discovers that the debt due to A was already time barred when he made the payment, and sues A to recover the money paid to him. Who should succeed, and why?
(b) A is the owner of the village Bhagwanpur, which abuts on a large river liable to flood. The village is submerged by an action of the river, and 3 years later is reformed on its old site. B takes possession of the lands that reappeared, on the ground that they belonged to his village Gurudasapur. A, in ignorance of his own title and rights, takes a lease of the lands from B for a period of 15 years. At the expiry of the terms of the lease, A discovers that the lands in his possession really belonged to Bhagwanpur, and refuses to give up possession. In a litigation between A and B, who should succeed, and why?

LAW RELATING TO WILLS

Examiner—MR. S. M. BOSE, BAR-AT-LAW.

The questions are of equal value.

You are not permitted to attempt more than EIGHT questions, nor more than one of two alternative questions.

1. (a) What are the essential characteristics of a will?

(b) Discuss the question about the legal effect of a contract by *A* with *B* not to revoke a bequest in favour of *B* contained in a will duly executed by *A*.

(c) *A* and *B* jointly execute with due formalities a document in these words: 'We bequeath all our properties to *C*.' What is the legal effect of the document? What do you understand by a 'joint will'?

Or,

2. What is a conditional will? Which of the following wills would you hold to be conditional? State reasons for your answer:—

(i) 'All men are mortal, and no one knows how soon his life may be required of him. Lest I should die before the next sun, I make this my last will and testament.'

(ii) A testator, intending to make a journey to a foreign country, made his will and testament in the following manner: 'If I die before my return from my journey I bequeath my properties to etc. etc.'

(iii) 'In case of any fatal accident happening to me, being about to travel by aeroplane, I hereby leave my properties to etc. etc.'

(iv) 'On leaving this station for Melbourne, in case of my death on the way, know all men this is my last will and testament.'

3. (a) Discuss the doctrine of conditions *in terrorem* in connection with testamentary bequests.

(b) Explain the doctrine of election in connection with testamentary gifts.

4. (a) Explain the two points of view from which the rule against perpetuities has been considered. Trace briefly the development of the rule in English law.

(b) To what extent does the rule against perpetuities apply to bequests in favour of charity? When does the rule cease to apply in the case of such bequests? State your reasons.

Or,

5. A testator bequeathed property to his daughter for life and, after her death, to such of her children as would attain the age of 21 years and the issue of such of the children as shall die before 21, which issue shall afterwards attain the age of 21 years.

The question is whether the bequests after the life estate to the daughter is valid. State clearly the successive steps in the process of dealing with the question. Are the bequests affected by the rule against perpetuities, and, if so, to what extent? Give reasons for your answer.

6. State the limits within which an absolute interest conferred by a bequest may be cut down to a lesser interest. Construe the following will addressed to the donee: 'I give you property *A* for your support. Being in possession of the lands do you and the generations born of your womb

successively enjoy the same. No other heir of yours shall have right or interest.' At the time of the death of the testator the donee had a daughter who survived her.

7. What is the meaning of the term 'lapse' used in connection with testamentary gifts? What is the effect of lapse? Explain the doctrine of lapse as applied to bequests to a class.

8. In connection with the construction of wills it has been said that the Court puts itself into the armchair of the testator. Explain fully the true meaning of this rule.

9. How is the office of executor created? State concisely the law regarding the renunciation of the office and the acceptance of the office by the executor. When does the office come to a close? Discuss briefly the law relating to the executor's right of retainer.

Or,

10. Discuss the law as to how far the acts of one of several co-executors bind the others.

11. (a) Discuss the law relating to the assent of the executor or administrator to a bequest. What is the remedy of a legatee where such assent is withheld?

(b) What are the rights and duties of an executor or administrator in connection with the payment of debts due from the deceased?

12. (a) Discuss the law relating to the abatement of legacies.

(b) In what circumstances is an executor entitled to claim refund of legacies already paid out?

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THE LAW OF EVIDENCE

Examiner—THE HON'BLE SIR MD. SULAIMAN, KT.

The questions are of equal value.

Only six questions are to be attempted. To secure full marks every question of these six should be answered as fully as is possible in half an hour.

1. Justify historically the statement that the Law of Evidence is of modern growth, but the principles on which it is founded are of great antiquity.

2. (i) When an arbitrator can be allowed to make private inquiries and act on private information, discuss why a judge should be prohibited from acting on his own personal knowledge and be enjoined to exclude the truth known to him from his consideration.

(ii) What objection can there be to a judge acting on his knowledge of the facts proved in a previous trial before him?

3. (i) Consider the utility of the modern form of oath and the desirability of requiring that every witness should take oath either with Ganges water or the Bible, or the Quran or some other holy book in his hands, which, according to his belief, would bring on severe vengeance if truth be not spoken.

(ii) Do any of the provisions of the Indian Oaths Act, in your opinion, stand in need of an amendment, and, if so, on what lines?

4. (i) Criticize the dictum that 'the burden of evidence may shift, but the burden of proof cannot'.

(ii) Illustrate your criticisms by three examples.

5. A tenant is found (1) to have ancestral house in the residential part of the site of a village, without payment of rent, and (2) to have been irrigating his fields with water from a tank on the zemindar's land without making any payment or rendering any service. No other facts are established. Discuss what rights, if any, the tenant can be considered to have acquired as against the zemindar.

6. Contrast the permissibility of (1) oral evidence being allowed to show that the words used in a document were intended to have a different meaning than the ordinary sense which they convey, and (2) a witness being asked whether the words heard by him were understood in a way different from they would ordinarily mean.

7. Discuss, with reference to the leading Privy Council and Full Bench cases, what evidence can be allowed to show that an ostensible deed of absolute sale, accompanied by a separate agreement for repurchase, was in reality a transaction of mortgage by conditional sale.

8. Discuss the conflict of presumptions in the following cases:-

- (a) The status of a Hindu family in 1912, when it is proved that it had been joint in 1911 and separate in 1913.
 - (b) The state of possession of an owner, when it is established in 1934 that he was in possession at least up to 1922, but not in possession at least since 1923.
 - (c) The year of the death of a propositus, when it is found that he was alive nine years ago and has not been heard of for eight years.
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Preliminary Scientific M. B. Examination

April, 1934

INORGANIC CHEMISTRY

Examiners— { Mr. BENIMADHAB CHAKRABARTI, I.M.S.
DR. QUDRATI KHEDA, D.Sc.
Mr. N. K. SEN, M.Sc.
DR. SUDHAMAY GHOSH, B.Sc., F.R.S., F.C.S.

The questions are of equal value.

Only THREE questions are to be attempted in EACH half.

First Half

1. What are the sources from which hydrogen can be prepared? Discuss the reactions involved in its preparation from the different materials.

Explain, with equations, the changes that take place when hydrogen (a) is passed over heated oxide of copper, (b) is mixed with bromine vapour and led through a tube containing heated charcoal, (c) acts in nascent condition on a solution of ferric chloride.

2. How can you prepare a pure sample of hydrogen peroxide? How can you distinguish hydrogen peroxide from ozone? Illustrate its oxidizing and reducing capacity.

3. Write explanatory notes on the following :—

(a) Isomorphism, (b) Electrolysis, (c) Atomic number, (d) Radio-activity.

4. What is fuming nitric acid? How would you prepare a sample of pure nitric acid in the laboratory? State its action upon (a) zinc, (b) ferrous sulphate, (c) copper.

Second Half

1. What are the following, and how are they prepared?—

(a) White lead, (b) Lunar caustic, (c) Plaster of Paris, (d) Epsom salt, (e) White vitriol.

Indicate the uses of the above.

2. What is meant by a strong acid, a strong base, a weak acid, and a weak base in terms of the ionic theory? How do you classify the following according to the above view : HCl , NH_4OH , KOH , H_2CO_3 ? How do you explain the phenomenon of neutralization of an acid by a base in terms of the above theory?

3. How does arsenic occur in nature? Clearly explain what you understand by an arsenious and an arsenic compound. How will you proceed to distinguish them?

4. 1.5 grams of ammonium chloride were heated with 20 grams of caustic soda. The gases that came out were led into 500 c.c. of a decinormal solution of sulphuric acid. After the whole of the gaseous product had been passed through the acid solution it was found that the same could then be exactly neutralized with 30 c.c. of a normal solution of sodium carbonate. Calculate the amount of ammonia obtained and the percentage of the same in the sample of ammonium chloride.

ORGANIC CHEMISTRY

Examiners— { Mr. BENIMADHAR CHAKRABARTI, L.M.S.
 Dr. QUDRATI KHUDA, D.Sc.
 Mr. M. K. SEN, M.Sc.
 Dr. SUDHAMAY GHOSH, D.Sc., F.R.S., F.C.S.

The questions are of equal value.

Only THREE questions are to be attempted in EACH half.

First Half

1. Explain the following terms with an example of each:—
 (a) Hydrolysis, (b) Mutarotation, (c) Polymerization, (d) Nitration, (e) Condensation.
2. What is lactic acid? How is it obtained? Mention the different isomers of lactic acid. What is this isomerism due to?
3. What are the reactions that lead you to suppose that some sugars possess aldehydic or ketonic groups in their molecule? How does cane sugar differ from any other sugar in its reactions?
4. Explain, with equations, the changes that take place when (a) to a mixture of iodine and acetone a solution of sodium carbonate is added, (b) acetic acid is treated with phosphorus trichloride, (c) formic acid or its sodium salt is heated alone or the free acid is heated with a strong dehydrating agent, (d) chlorine is passed through alcohol.

Second Half

1. Describe the action of heat on the following: (a) urea, (b) uric acid, (c) starch, (d) cane sugar, (e) salicylic acid.
2. How do aromatic hydrocarbons differ from the aliphatic ones? Describe fully the isolation and purification of one aromatic hydrocarbon, and state its properties and uses.
3. Describe the process for the isolation of quinine, indicating clearly the steps you will adopt for purifying it from the accompanying impurities. State its properties, uses, and tests.
4. An organic substance contained 40 per cent. of carbon and 6.67 per cent. of hydrogen. The substance reacted as a monobasic acid and the molecular weight was found to be 60. What do you think the substance is?

PHYSICS

Examiners— { Mr. T. D. KAR, M.A.
 Dr. M. M. RAY, D.Sc.
 Prof. D. M. BOSE, M.A., Ph.D.
 Dr. SNEHAMAY DATTA, D.Sc.

The questions are of equal value.

Only THREE questions to be attempted in EACH half.

First Half

1. Find an expression for the sensitiveness of a common balance. How is it practically measured and expressed? How can the sensitiveness of a balance be regulated?

2. Define osmotic pressure.

State and explain the laws of osmotic pressure, and combine them into a single formula.

Calculate the osmotic pressure of '1 molar solution of sodium acetate at 0°C. and 80% dissociated.

3. Distinguish between musical notes and noises. To what physical characteristics do the pitch and the quality of a musical note correspond?

Describe any accurate method for finding the pitch of a tuning fork, explaining the underlying theory.

4. Define relative humidity and dew point. Prove that the maximum vapour pressure at the dew point is equal to the partial pressure of the vapour in air.

Explain a method for finding the relative humidity depending upon the above principle.

5. Explain fully the adjustments of the spectroscope. How do you use it for the study of spectra?

Second Half

6. A convex lens of focal length 10 cm. and a concave lens of focal length 15 cm. are placed coaxially at a distance of 10 cm. apart. Find the position and the magnification of the image of an object placed at a distance of 20 cm. in front of the convex lens.

7. What is rotatory polarization?

Describe a polarimeter, giving a sectional diagram and explaining the functions of its different parts.

Explain how the specific rotation of dextrose can be measured with it.

8. Define resistivity.

Describe an experiment to find the resistivity of the material of a wire with the metre bridge, proving the formulae used.

9. What do you understand by migration of ions?

Why are equivalent quantities of kation and anion liberated during electrolysis although their velocities may be different?

Describe an experiment for finding the ratio of the velocities of the kation and the anion.

10. State and explain the law of electromagnetic induction.

Apply it to explain the action of the medical battery.

BOTANY

Examiners— $\left\{ \begin{array}{l} \text{DR. SAHAYRAM BOSE, M.A., PH.D.} \\ \text{DR. SAILESWAR MOOKHERJEE, L.M.S.} \\ \text{MR. SURENDRA CHANDRA BANERJEE, M.A., B.Sc. F.L.S.} \\ \text{MR. K. P. BISWAS, M.A.} \end{array} \right.$

The figures in the margin indicate full marks.

Part I.

1. Describe the different kinds of climbing plants. 50

Or,

2. What are the various kinds of roots and their modifications? 50



Part 2.

1. Write short notes on the following, with special reference to their occurrence in plants:— 50

(a) Collenchyma, (b) Sclerenchyma, (c) Sclerotic cells, (d) Radial bundles, (e) Scalariform tracheid.

Or,

2. What is mesophyll? Describe the different types of mesophyll with sketches. 50

Part 3.

1. What is ascent of sap? What are the causes? 50

Or,

2. Describe the process of fertilization in Angiosperms. 50

Part 4.

1. Describe the N.O. *Labiata*. 50

Or,

2. Describe the reproductive structures of *Selaginella*. 50

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ZOOLOGY

DR. EKENDRANATH GHOSH, M.Sc., M.D., F.Z.S.

(Convener).

Examiners {

DR. TARAKNATH PODDAR, M.Sc., M.D.

DR. HIMADRIKUMAR MOOKERJEE, D.Sc., (Lond.)

DR. BENI PRASAD, D.Sc.

The questions are of equal value.

Two questions to be attempted from EACH part.

(Illustrate your answer with diagrams as far as practicable)

First Part

1. Why do you consider the study of Zoology to be of importance for a medical student?
2. Describe the development of Allantois in Chick.
3. What are the evidences for Organic Evolution?

Second Part

1. Describe the various modes of reproduction in Protozoa.
2. Give a drawing of a transverse section through the body of a *Hydra*; label the various structures.
3. Describe briefly the genital organs of the earthworm (*Pheretima*).

Third Part

1. Describe the mouth-parts of the Cockroach.
2. Give a short account of the life-history of the freshwater mussel.
3. What are the general characteristics of the phylum Arthropoda?

Fourth Part

1. Make a neat drawing of the dorsal view of the brain of a toad, and label the various parts.
 2. Describe the pelvic girdle of the guinea-pig.
 3. Write short notes on any five of the following:—
 (a) Axis Vertebra; (b) Meiosis; (c) Trichocyst; (d) Cyclops; (e) Organ of Bojanus; (f) Notochord; (g) Conus Arteriosus; (h) Telson.
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November, 1934

INORGANIC CHEMISTRY

Examiners— {

 MR. BENIMADHAB CHAKRABARTI, I.M.S.
 DR. SUDHAMAY GHOSH.
 MR. M. K. SEN, M.Sc.
 PROF. JNANENDRANATH MOOKERJEE, D.Sc.

Only THREE questions are to be attempted in each half.

The questions are of equal value.

First Half

1. How is the atomic weight of an element determined from its vapour density? Briefly mention the different methods by which the atomic weight of an element so obtained may be confirmed.
2. How would you prepare a sample of pure sulphur dioxide in the laboratory? How is its bleaching action explained? What is its action on (a) an aqueous solution of iodine, (b) sulphuretted hydrogen, (c) caustic potash?
3. Explain the following terms: (a) osmosis, (b) endothermic reaction, (c) mass action, (d) atomic number, (e) gram molecular weight.
4. How would you prepare ozone? What are its properties and tests? Under what conditions is ozone found in the atmosphere?

Second Half

1. How are the following prepared: (a) iron perchloride, (b) calomel, (c) white lead, (d) plaster of paris, (e) sodium bicarbonate?
 State their formulae and uses.
 2. How would you proceed to detect minute traces of arsenic in a turbid solution? How would you distinguish between arsenic and antimony in these tests?
 3. The formula of ammonia is NH_3 . What information does this convey to you with regard to (a) the composition of ammonia by weight, (b) the density of the gas, (c) the volume of oxygen required for the complete conversion of 100 c.c. of ammonia at N.T.P. into nitrogen, and what is the volume of nitrogen so obtained?
 4. Describe the preparation of a colloidal solution. In what respects does it differ from a true solution?
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ORGANIC CHEMISTRY

Examiners— {
 MR. BENIMADHAB CHAKRABARTI, L.M.S.
 DR. SUDHAMAY GHOSH.
 MR. M. K. SEN, M.Sc.
 PROF. JNANENDRANATH MOOKERJEE, D.Sc.

Only THREE questions are to be attempted in each half.

The questions are of equal value.

First Half

1. An organic liquid contains carbon and hydrogen. State the data necessary for determining its molecular formula. How would you proceed to determine its molecular weight?

2. How is formaldehyde prepared, and what are its uses? State all the reactions in which formaldehyde differs from acetaldehyde.

3. Explain with illustration the following:—

(a) Osazones, (b) olefines, (c) tautomerism, (d) saponification, (e) mercaptan.

4. What are the enzymes present in malt and in yeast? Describe the changes which occur when starch is treated first with an extract of malt and then with yeast. How would you identify the products formed from starch at each stage of its breakdown?

Second Half

1. What is optical activity? Discuss the optical isomerism of an organic compound containing two asymmetric carbon atoms.

2. What are anæsthetic and antiseptic substances? Give the names of all important members of each of these classes of compounds. Describe the preparation and properties of one of each class.

3. Describe the preparation, properties, and tests of (a) cocaine, (b) atropine.

4. Describe the action of the following reagents on aniline, and compare the corresponding reactions with ethylamine:—

(a) sulphuric acid, (b) nitric acid, (c) nitrous acid.

PHYSICS

Examiners— {
 MR. T. B. KAR, M.A.
 DR. M. M. RAY, D.Sc.
 DR. SNEHAMAY DATTA, D.Sc.
 MR. NIBARANCHANDRA RAY, M.A.

The questions are of equal value.

Only THREE questions to be attempted in each half.

First Half

1. Explain the terms: osmotic pressure, semipermeable membrane, hypertonic, and hypotonic solutions.

State the laws of osmotic pressure. How, from its measurement, can a colloidal solution be distinguished from an electrolytic solution?

2. How do you explain the existence of tension along the surface of a liquid? Describe an experiment to measure the surface tension of a liquid, and deduce the law.

3. Explain how sound vibrations are transmitted through the ear. How are they modified during transmission? Explain Helmholtz's resonance theory of hearing.

4. Define Boiling Point of a liquid. Describe an arrangement for finding the boiling point of a solution, stating clearly the precautions to be taken. How does the boiling point vary with the concentration of the solution?

5. Give a neat sectional diagram of the compound microscope, and explain the functions of its different parts. What do you understand by the mechanical tube length, and how does the magnifying power vary with it?

Second Half

6. Deduce the condition for minimum spherical aberration for two lenses separated by a distance. Describe Huyghen's eyepiece, and show that it satisfies the conditions for minimum spherical and chromatic aberration.

7. Define specific rotation of a solute in a solution.

Describe the polarimeter, and explain the functions of its parts.

The specific rotation of dextrose is $52^{\circ}.8$. The rotation produced by 5% solution of dextrose contained in a tube is found to be 5° . Calculate the length of the tube.

8. Describe a moving coil galvanometer, and find an expression for the current. Make a comparison between coil and needle galvanometers.

9. The poles of a battery are connected to a voltmeter with thick copper wires and the reading is 18 volts. The reading decreases to 6 volts when the poles are also connected through a resistance of 5 ohms. Calculate the internal resistance of the battery.

10. Describe an X-ray focus tube, and explain how X-rays can be produced with it. What must be the properties of the metal that is used in the anticathode? Mention some of the properties of X-rays.

BOTANY

<i>Examiners</i> -	{	DR. SAHAYRAM BOSE, M.A., Ph.D.
		MR. SAILESWAR MOOKERJEE, L.M.S.
		MR. SURENDRACHANDRA BANERJEE, M.A., B.Sc., F.L.S.
		DR. HIDAYETULLAH, M.A., Ph.D.

The figures in the margin indicate full marks.

Part I.

1. Describe, with neat sketches, the principal modified forms of stem for vegetative propagation. 50

Or,

What is a bud? Describe the modes of arrangement of the leaves in a bud. 50

Part II.

2. Describe the structure of a lenticel, and explain how it is formed. Give sketches. 50

Or,

What is mesophyll? Describe the principal types of mesophyll with sketches. 50

Part III.

3. What is carbon-assimilation? Describe the process. 50

Or,

Give an account of asexual reproduction in *Mucor*. Give sketches. 50

Part IV.

4. Give the characteristic features of the Natural Order *Cucurbitaceae* or *Apocynaceae*. 50

ZOOLOGY

Examiners— { MR. BIRENDRAKUMAR MITRA.
DR. TARAKNATH PODDAR, M.Sc., M.D.
DR. HIMADRIKUMAR MUKHERJEE, D.Sc. (Lond.).
DR. BENI PRASAD, D.Sc.

The questions are of equal value.

Two questions to be attempted from each part.

Illustrate your answers with diagrams as far as possible.

First Part.

1. Describe the main differences between plants and animals.
2. Describe the metamorphosis of Frog.
3. What are the differences between Darwin's theory of Organic Evolution and De Vries' views on the same subjects.

Second Part.

1. Describe the modes of reproduction in *Obelia*.
2. Give a drawing of a transverse section of the earthworm through the middle; label the various structures.
3. What are the main characters of the Protozoa and its subdivisions?

Third Part.

1. Describe the vascular system of the freshwater prawn.
2. Describe the alimentary canal of the freshwater mussel.
3. What are the general characters of the Insecta?

Fourth Part.

1. Describe the pectoral-girdle of the toad.
2. Describe the circulation of blood in a Ruhu fish.
3. Write short notes on any five of the following:—
 - (a) Atlas.
 - (b) *Conus arteriosus*.
 - (c) Nematocyst.
 - (d) Metagenesis.
 - (e) Allantois.
 - (f) *Chorda dorsalis*.
 - (g) Poison-apparatus of a snake.
 - (h) Zoa.

First M. B. Examination,

April, 1934

ANATOMY

<i>Exam</i>	<i>s -</i>	{	RAI NANILAL PAN BAILADUR, M.B.
			MR. M. N. BOSE, M.B.
			CAPT. DINESCHANDRA CHAKRABARTY, F.R.C.S. (E).
			MR. PREMNATH RAY, M.B., F.R.C.S. (Eng).

FIRST PAPER

The figures in the margin indicate full marks.

First Half

1. Describe the blood supply, lymphatic drainage, and development of the Mammary gland. 65
2. Describe the extent and boundaries of the Omental Bursa. 60

Second Half

1. Describe the Hypophysis cerebri and its relations. State what you know about its development. 60
2. Describe the bursæ around the knee-joint. 65

Or,

Describe the Mandibular articulation and its movements, mentioning the muscles concerned in their production. 65

SECOND PAPER

The figures in the margin indicate full marks.

First Half

1. Describe the medial wall of the Tympanic cavity. 60
2. Describe fully the cervix of the uterus, noting its peritoneal relations and lymphatic drainage. 65

Second Half

1. Describe the steps of the dissection to expose the Thoracic Duct in the neck. 65
2. What is the 'Surgical Neck' of the Humerus? What important anatomical relations do you find at this level? 60

Or,

Describe the intermuscular septa of the arm. 60

PHYSIOLOGY

Examiners— { PROF., S. C. MAHALANOBIS, B.Sc., F.R.S.E. (Convener)
CAPT. PREMANKUR DEY, M.B., B.Sc., M.R.C.P.(E).
MR. M. M. DATTA, L.M.S.
MR. PRANINDRANATH BRAHMACHARI, M.Sc., M.B. .

FIRST PAPER

The questions are of equal value.

Answer only TWO questions from EACH half.

First Half

1. Describe the paths and destination of non-sensory afferent impulses that travel up the spinal cord.
2. Describe the structure and function of the organ of Corti.
3. Draw a diagram of the Cervical region of the spinal cord, shewing the position of the different motor and sensory tracts.

Second Half

1. Describe minutely the structure of a Graafian follicle. What are the effects of removal of ovary before puberty?
2. Write short notes on the following :—
 - (a) Basal metabolism.
 - (b) Latent period of muscular contraction.
 - (c) Visual purple.
 - (d) Wallerian degeneration.
 - (e) Coronary circulation.
3. Describe the composition and the mechanism of formation of lymph.

SECOND PAPER

The questions are of equal value.

Answer only TWO questions from EACH half.

First Half

1. Discuss the effects of rise of arterial blood pressure on the heart.
2. Describe the movements of the stomach after a meal.
3. Mention the composition of normal urine, and describe the origin of the constituents containing nitrogen in it.

Second Half

1. Describe the mechanism of absorption and the path of transport of fat from the alimentary tract.
2. Discuss the transport of CO_2 in the body.
3. Discuss the mechanism of vasodilatation.

November, 1934**ANATOMY**

Examiners— { **RAI, NANILAL PAN BAHADUR, M.B. (Convener)**
MR. M. N. BOSE, M.B.
MR. PREMNIHAR RAY, M.B., F.R.C.S. (Eng.).
MR. BIRESWAR MITRA, F.R.C.S. (E).

FIRST PAPER*The figures in the margin indicate full marks.***First Half**

1. Describe the Antibrachial Interosseous membrane giving its immediate relations. 60
2. Describe the Inferior Frontal Gyrus. 65

Second Half

1. Describe the course, relations, and tributaries of the Portal Vein. 60
2. Describe the Thymus. State what you know about its development. 65

Or,

Describe the Parathyroid glands and their development.

SECOND PAPER*The figures in the margin indicate full marks.***First Half**

1. Describe the cutaneous nerves of the Scalp. 60
2. Give the origin, insertion, action, and nerve supply of the Extrinsic muscles of the Eyeball. 65

Second Half

1. Describe the Menisci of the knee-joint and their relations to the neighbouring structures. 60
2. Describe the Testis with its blood vessels, lymphatics, and nerve supply. 65

Or,

Describe the course, relations, blood supply, and lymphatics of the Ureter in the female.

PHYSIOLOGY

Examiners— { PROF. S. C. MAHALANOBIS, B.Sc., F.R.S.E. (Convener)
 MR. MADANMOHAN DATTA
 DR. RUDRENDRAKUMAR PAL, M.Sc., M.B., M.R.C.P.
 D.Sc. (Berlin).
 CAPT. PREMANKUR DEY, M.B., B.Sc., M.R.C.P. (E).

FIRST PAPER

The questions are of equal value.

Answer only TWO questions from each half.

First Half

1. Trace the course of an impulse causing contraction of the pupil when light falls on the retina.
2. Describe the effects of the section of the nerve roots of the spinal cord.
3. Discuss the mechanism of secretion of gastric juice, and state its influence on the digestion of protein.

Second Half

1. Discuss the physiological problems involved in an attempt to climb Mount Everest.
2. How does blood maintain a fairly constant hydrogenion concentration?
3. Give the composition and properties of milk. Mention the factors that alter the composition of milk.

SECOND PAPER

The questions are of equal value.

Answer only TWO questions from each half.

First Half

1. Discuss the chemical changes that accompany muscular activity.
2. State briefly the minute structure, innervation, and functions of the small intestine.
3. Write short notes on :—
 - (a) Oestrin.
 - (b) Demarcation current.
 - (c) Nissl granules.
 - (d) Respiratory quotient.

Second Half

1. Discuss the metabolism during starvation.
2. Describe the circulation in the lungs and the liver.
3. Describe the actions of the various hormones of the pituitary gland.

Second M. B. Examination,

April, 1934

PHARMACOLOGY AND MATERIA MEDICA

MR. BIRENDRANATH GHOSH, F.R.F.P.&S. (GLASS).

(Convener)

Examiners—

DR. INDUBHUSAN BOSE, M.B.

MR. JATINDRACHANRA AICH, M.B., M.R.C.P., (EDIN).

„ J. C. GUPTA, M.B.

The questions are of equal value.

ANY TWO questions in EACH half to be answered.

First Half

1. Discuss the different modes of action of Purgatives. Compare the action of Calomel with that Magnesium Sulphate.
2. Write short notes on:—
 - (a) Vaccine therapy.
 - (b) Local anaesthesia.
 - (c) Salt action.
 - (d) Ionic action of drugs.
3. Classify Arsenical Compounds, and describe the pharmacological action and therapeutic uses of Organic Arsenical Compounds.

Second Half

4. Classify Hypnotics according to their mode of action, mentioning the advantages and disadvantages of each group.
5. Write short notes on:—
 - (a) Action of adrenalin on circulatory system.
 - (b) Action of caffeine on urinary system.
 - (c) Absorption and excretion of Iron.
6. Classify Anthelmintics, and describe briefly their general mode of administration. Discuss the pharmacological action of Santonin.

ELEMENTARY BACTERIOLOGY AND PATHOLOGY

Examiners— { MR. CHARUCHANDRA BOSE, B.A., M.B., (Convener)
DR. JITENDRANATH MAITRA, M.D.
MR. M. N. DEY, M.B., M.R.C.P.
CAPT. C. L. PASRICHA, I.M.S.

The questions are of equal value.

Illustrate your answers with diagrams whenever necessary.

First Half

1. Describe the naked eye and microscopic appearances of the ulcers commonly met with in the large gut in the Tropics.

2. What is a parasite? Enumerate the common parasites of blood. Describe in detail the morphology, development, and mode of transmission of any one of them.

Or,

Enumerate the common intestinal worms, and describe the life-history of any one which has an intermediary host.

Second Half

3. Discuss the general defence-mechanisms of the body with reference to bacterial infections.

4. Write short notes on the following:—

- (a) Embolism.
- (b) Organisms of gas gangrene.
- (c) Metastasis in malignant neoplasms.

Or,

Enumerate the important bacteria which cause acute dysentery in man.

State how you would isolate them from a case of acute bacillary dysentery, and how you would identify them.

November, 1934

PHARMACOLOGY AND MATERIA MEDICA

Examiners— { LT.-COL. R. N. CHOPRA, M.A., M.D. (CANTAB), I.M.S.
(Convener)
MR. BIRENDRANATH GHOSH, F.R.F.P.&S. (GLASS).
DR. INDHURIUSHAN BOSE, M.D.
MR. SUNILCHANDRA BOSE, M.B., M.R.C.P., D.T.M.

The questions are of equal value.

Only TWO questions in EACH half to be answered.

First Half

1. Describe the pharmacological action of alkaloids of the cinchona.
2. Classify Diuretic drugs, and discuss their mode of action.
3. Write brief notes on the following:—
 - (a) Basal narcotics.
 - (b) Liver extract.
 - (c) Carbon tetrachloride.
 - (d) Ephedrine.

Second Half

1. Classify drugs acting on the sympathetic and parasympathetic systems.

Discuss their value in therapeutics.

2. Describe the general pharmacological action of acids and alkalies.

3. Write short notes on:—

- (a) Antagonism and Synergism.
- (b) Organometallic compounds.
- (c) Idiosyncrasy.
- (d) Parenteral medication.

ELEMENTARY BACTERIOLOGY AND PATHOLOGY

Examiners— { MR. CHARUCHANDRA BOSE, B.A., M.B. (Convener)
,, M. N. DEY, M.B., M.R.C.P.
CAPT. C. L. PASRICHA, I.M.S.
DR. SATYENDRANATH RAY, M.B., F.R.C.S.

The questions are of equal value.

Illustrate your answers with diagrams whenever necessary.

1. What is a granuloma? Enumerate the important specific granulomas. Describe the comparative histological structures of any three of them.

2. What are Nematelminthes? Enumerate the common important ones parasitic in man.

Describe the morphology, development, and mode of transmission of any one of them.

Or,

Describe the parasite of malignant tertian fever, and give its life history in the mosquito.

3. Describe the mechanism of agglutination reaction. Discuss its application and value in the identification of an organism. Give examples.

4. Write short notes on the following :—

- (a) Analphylaxis.
- (b) Amyloid change.
- (c) Hydatid cyst.
- (d) *Entamoeba histolytica*.

Or,

Give in detail the technique for the bacteriological examination of blood. Discuss the value of this examination in the diagnosis of different infective diseases. Give examples.

Third M. B. Examination

April, 1934

FORENSIC MEDICINE

Examiners—	{	CAPT. HAJI DABIRUDDIN AHMED, L.M.S., V.A.H.S., O.B.E., A.I.R.O. (Convener)
		MR. A. N. SEN, M.B.
		LT.-COL. K. S. THAKUR, I.M.S.
		RAI UPENDRANATH RAYCHAUDHURY, BAHADUR, L.M.S.

The figures in the margin indicate full marks.

First Half

1. Describe the post-mortem appearances of death by Throttling. How would you distinguish it from death by Strangulation? 125
2. Describe :— 125
 - (a) A contusion.
 - (b) Adipocere.
 - (c) Post-mortem lividity.
 - (d) Contused wound.
 - (e) Criminal abortion.

Or,

Describe the post-mortem significance of :—

- (a) Adipocere.
- (b) Mummification.
- (c) Ligature mark round the neck.
- (d) Suggillation.
- (e) Ruptured Hymen.

Second Half

3. Describe the various kinds of wounds met with in medico-legal practice. 125
4. Distinguish between ante-mortem and post-mortem— 125
 - (a) Blisters.
 - (b) Ligature marks.
 - (c) Wounds.
 - (d) Blood clot.

Or,

Mention the different factors which modify the action of a poison in a living subject. Describe the signs, symptoms, and treatment of poisoning by pure carbolic acid.

HYGIENE AND PUBLIC HEALTH

Examiner -	{	LT.-COL. A. T. STEWART, C.I.E., M.B., Ch.B.,
		F.R.C.S.E., D.P.H., D.T.M.&H., I.M.S., (Convener)
		DR. B. B. BRAHMACHARI, M.B.
		DR. R. B. KHAMRATA, D.P.H., M.R.C.P., M.R.C.S.
		SIR HASAN SUHRAWARDY, KT., O.B.E., M.D., F.R.C.S.I., D.P.H., LL.D.
		MR TARAKNATH MAJUMDAR, L.M.S., D.P.H., D.T.M., F.C.S.

The questions are of equal value.

First Half

1. Describe the antilarval measures which are generally taken to control diseases which are spread by mosquitoes. In selecting a particular larvicide what are the important points to be taken into consideration?

2. In your general medical practice you have come across a case of 'open' Tuberculosis. What detailed instructions would you give to the patient and to the other members of the patient's family to prevent the disease from spreading?

3. What do you mean by a 'carrier' of disease? Mention the diseases in which 'carriers' play an important part. Taking one of the diseases as an example how would you deal with the 'carrier' of this particular disease?

Second Half

4. There is an epidemic of cholera in a village. What steps would you take to check the epidemic, the water supply being from tanks and wells?

5. What is a septic tank? Describe its working and the changes that take place in the sewage during its stay. How may the effluent from the septic tank be finally dealt with or purified?

Under what circumstances and how should the final effluent be sterilized?

6. What are coal tar disinfectants? What are the qualities of a good coal tar disinfectant? In what proportions are they used to disinfect excreta and rooms?

November, 1934

FORENSIC MEDICINE

Examiners—	{	CAPT. HAJI DABIRUDDIN AHMED, L.M.S., V.A.H.S.,
		O.B.E., A.I.R.O. (Convener)
		LT.-COL. B. G. MALLYA, F.R.C.S.E., I.M.S.
		MR. A. N. SEN, M.B.
		RAI UPENDRANATH RAYCHAUDHURI BAHADUR, L.M.S.

The figures in the margin indicate full marks.

First Half

1. Describe the signs, symptoms, and treatment of poisoning by aconite root.

2. How would you ascertain how long a body has been dead? Discuss this question in full. 125

Or,

How would you ascertain the age of a person? 125

Second Half

3. Describe the post-mortem appearances of death due to suffocation. 125

4. How would you ascertain whether a cut throat wound was suicidal or homicidal? 125

Or,

What are the common methods of inducing criminal abortion in India? How will you proceed to examine a case of alleged criminal abortion? 125

HYGIENE AND PUBLIC HEALTH

Examiners— { Lt.-COL. A. D. STEWART, C.I.E., M.B., CH.B.,
F.R.C.S.E., D.P.H., D.T.M.&H., I.M.S. (Convener)
DR. R. B. KHAMBATA, D.P.H., M.R.C.P., M.R.C.S.,
SIR HASAN SUHRAWARDY, KT., O.B.E., M.D., F.R.C.S.I.,
D.P.H., LL.D.
MR. TARAKNATH MAJUMDAR, L.M.S., D.P.H., D.T.M.,
F.C.S.

The questions are of equal value.

*Only two questions to be answered in EACH half; Question
Nos. 1 and 4 are compulsory.*

First Half

1. Discuss the advantages and disadvantages of having a slow sand filter or a mechanical filter for a small town situated on the river Hooghly.

2. What is Hill Kata Thermometer? What is it used for, and how do you use it?

3. In what cases would you use a gaseous disinfectant and in what cases a disinfectant in the form of a spray? Enumerate the different gaseous disinfectants, and describe how you would prepare any one of them.

Second Half

4. How would you make a malaria survey of a small town in Bengal?

5. What are vitamins? Mention the diseases which are due to deficiency of Vitamin A and Vitamin D. Mention the foods in which these two vitamins are present. What is the effect of irradiation on these two vitamins?

6. What steps can be taken to reduce the incidence of tuberculosis in a small town in Bengal?

Final M. B. Examination

April, 1934

MEDICINE

FIRST PAPER

Examiners— {
RAI BAHADUR DR. UPENDRANATH BRAHMACHARI, M.A.,
M.D., Ph.D., F.A.S.B. (Convener)
DR B. C. RAY, B.A., M.D., F.R.C.S., M.R.C.P.
LT.-COL. J. C. DEY, M.B., M.R.C.P., I.M.S.
CAPT. PRATULPATI GANGULI, B.A., D.T.M.
LT.-COL. E. H. VERE-HODGE, I.M.S., M.D., M.R.C.P.
DR. A. K. RAYCHAUDHURI, M.D.

The questions are of equal value.

First Half

1. Describe the signs and symptoms of heart-failure in a case of mitral stenosis. Describe the naked eye appearances that would be found in the post-mortem examination in such a case.

2. A middle aged person is suffering from Polyuria. Describe the methods of investigation to arrive at a proper diagnosis.

Second Half

1. Give the causes, signs, symptoms, and diagnosis of a case of peripheral neuritis.

Or,

2. Classify fevers of short duration not exceeding ten days. Give their differential diagnosis.

SECOND PAPER

The questions are of equal value.

First Half

1. Give the signs, symptoms, differential diagnosis, and pathology of a case of cancer of liver.

2. Describe the mode of onset of Pulmonary Tuberculosis. Discuss the diagnosis of the disease in its initial stage. What are the indications for performing artificial Pneumothorax in this disease?

Second Half

1. Describe the signs and symptoms of rheumatic infection in a child under ten years of age.

Or,

2. Describe the signs, symptoms, diagnosis, and treatment of a case of Exophthalmic goitre.

SURGERY

FIRST PAPER

Examiners— { DR. MRIGENDRALAL MITRA, M.D., F.R.C.S.E. (Covener)
LT.-COL. W. L. HARNETT, I.M.S., F.R.C.S., M.A., M.D.
MR. SUBODHCHANDRA DATTA, M.B., F.R.C.S.(E), L.M.
LT.-COL. E. W. O' G. KIRWAN, M.B., F.R.C.S.I., I.M.S.
DR. LALITMOHAN BANERJEE, M.S., F.R.C.S.
DR. S. K. MUKHERJEE, D.O. (Oxon), D.O.M.S. (Lond),
F.R.C.S. (E).

The questions are of equal value.

Either Question 4 or 5 must be answered.

First Half

1. Give the clinical features and diagnosis of chronic interstitial mastitis. Describe its pathology, and discuss the treatment.

2. Describe the pathological changes produced in bone by infection by *Spirochaeta pallida*. Give brief clinical descriptions of the forms met with in congenital syphilis.

Second Half

3. Describe the fascial compartments of the palm of the hand and the synovial sheath of the flexor tendons. Where would you make your incisions for the release of pus in these different sites?

4. Describe the post-operative management of a case of abdominal section for chronic appendicitis. What complications may arise, and how would deal with them?

Or,

5. Describe in detail the management of a case of compound fracture of the tibia and fibula. What complications may arise, and how would you deal with them?

SECOND PAPER

Examiners— { DR. MRIGENDRALAL MITRA, M.D., F.R.C.S.E. (Convener)
 LT.-COL. W. L. HARNETT, I.M.S., F.R.C.S., M.A., M.D.
 MR. SUBODHCHANDRA DATTA, M.B., F.R.C.S(E), L.M.
 LT.-COL. E. W. O' G. KIRWAN, M.B., F.R.C.S.I., I.M.S.
 DR. S. K. MUKHERJEE, D.O. (Oxon), D.O.M.S. (Lond),
 F.R.C.S.(E).

The questions are of equal value.

Either Question 4 or 5 must be answered.

1. Describe the anatomy of the lachrymal sac. What is the causation of chronic dacryocystitis? How would you diagnose and treat a case?
2. Describe fully how you would proceed to investigate a case of glandular enlargement on the left side of the neck, giving the conclusions which you would draw from your findings.
3. Discuss the pathology of senile enlargement of the prostate gland. How would you proceed to determine whether a case was suitable for operative treatment?
4. Describe the pathology of acute otitis media. Give the symptoms and signs. How would you treat a case?

Or,

5. What are the causes of enlargement of the parotid gland? Discuss the differential diagnosis.

MIDWIFERY

Examiners— { SIR KEDARNATH DAS, KT., C.I.E., F.C.O.B. (Convener)
 MR. NARENDRANATH BASU, I.M.S.
 „ BIMANDAS MUKHERJEE, I.M.S.
 „ SATINATH BAGCHI, M.Sc., M.B., M.O.
 LT.-COL. P. FLEMING GOW, I.M.S., F.R.C.S.E., D.S.O.
 MR. MANINDRANATH SARKAR, M.B., F.R.S.C.E.

FIRST PAPER

The figures in the margin indicate full marks.

First Half

1. What is a 'Tubo-ovarian mass'? Discuss its etiology and pathology. Mention the common symptoms of this affection. 65

Or,

Give the differential diagnosis of a mass felt in the Pouch of Douglas by abdomino-vaginal palpation.

2. What are the chief causes of still-birth in Breech Presentation? Describe how you would conduct the case to prevent that happening. 60

Second Half

3. Discuss the indications for Induction of Abortion. How would you induce abortion in the third month of pregnancy? 65
 4. What are your duties in conducting the Second Stage of Normal Labour? 60
-

SECOND PAPER

The figures in the margin indicate full marks.

First Half

1. Discuss the aetiology and prevention of Obsteric Shock. 60
2. You are called in to attend a case of severe post partum hæmorrhage immediately after the birth of the child. What are the things you will take with you, and how would you proceed to treat the case? 65

Second Half

3. Mention the common injuries of the Birth Canal after a full-term labour. How would you treat them? 60
 4. Describe the gross and microscopical structure of the Human Ovary.
-

November, 1934

MEDICINE

Examiners— { SIR UPENDRANATH BRAHMACHARI, Kt., M.A., M.D.,
 PH.D., F.A.S.B., RAI BAHADUR, (Convener)
 DR. B. C. ROY, B.A., M.D., F.R.C.S., M.R.C.P.
 LT.-COL. E. H. VERE-HODGE, I.M.S.
 DR. HARIHAR GANGULI, M.D.
 LT.-COL. A. DENHAM WHITE, M.B., B.S., I.M.S.
 MR. AKHILRANJAN MAJUMDAR, M.B.

FIRST PAPER

The questions are of equal value.

First Half

1. Give the classification of the causes of enlargement of the liver with the chief points in differential diagnosis.
2. Under what conditions are the gastric secretions altered from normal?
 Discuss in detail two diseases which result from such abnormality.

Second Half

3. Describe the etiology of high blood pressure. State what steps you would take to ascertain fully the condition of the patient in whom you found the blood pressure to be raised, and indicate the basis on which the prognosis is formed. (Laboratory proceedings need not be described in detail.)

Or,

Give the etiology, symptoms, signs, and treatment of Grove's disease.

SECOND PAPER

Examiners—
 SIR UPENDRANATH BRAHMACHARI, KT., M.A., M.D.,
 PH.D., F.A.S.B., RAI BAHADUR, (Convener).
 DR. B. C. RAY, B.A., M.D., F.R.C.S., M.R.C.P.
 LT.-COL. E.H. OERE-HODGE, I.M.S.
 DR. HARIHAR GANGULI, M.D.
 LT.-COL. A. DENHAM WHITE
 MR. AKHILRANJAN MAJUMDAR, M.B.

The questions are of equal value.

First Half

1. Under what conditions would you get the group-symptoms indicated by the term 'Parkinsonism'? Describe the symptoms and signs of Encephalitis Lethargica.

2. Describe the signs of congenital syphilis, giving the ages at which the different signs appear.

Second Half

3. Describe the conditions leading upto the accumulation of purulent fluid in the pleura, and explain the significance of the laboratory examinations of fluid in each case.

Or,

What are the indications for transfusion of blood, and what precautions would you adopt before undertaking it?

SURGERY

Examiners— { DR. LALITMOHAN BANERJEE, M.S., F.R.C.S. (Convener)
 „ SUBODHCHANDRA DATTA
 „ S. K. MURJEE, D.O. (Oxon.), D.O.M.S. (Lond.),
 F.R.C.S.(E).
 CAPTAIN DINESHCHANDRA CHAKRABARTI, F.R.C.S.(E).
 LT.-COL. E. W. O. G. KIRWAN, M.B., F.R.C.S.I., I.M.S.
 LT.-COL. N. J. ANDERSON, I.M.S.

FIRST PAPER

The questions are of equal value.

Either Question No. 4 or 5 to be attempted.

First Half

1. Describe the steps you would take to establish the diagnosis of a swelling in the right iliac region, giving the conclusions you would draw from each step.

2. What is dysphagia? What are the causes of this condition, and how would you proceed to investigate such a case?

Second Half

3. Describe a typical case of concussion of the brain. Discuss briefly its pathology.

4. What are the different varieties of acquired dislocation of the hip joint? What are the difficulties met with in the reduction of each variety?

Or,

5. What are the varieties of fracture met with in the neighbourhood of the ankle joint? Give your treatment of each variety.

SECOND PAPER

The questions are of equal value.

Either Question No. 4 or 5 to be attempted.

1. What are the ocular complications of (a) epidemic dropsy, (b) diabetes, (c) syphilis? Discuss the pathology, and describe briefly the treatment of each.

2. How would you treat a case of extensive burn involving a large area of the trunk and part of the limbs? What are the complications you

would expect in such a case, and what measures would you adopt to prevent them or treat them when they arise?

3. What are the causes of epistaxis, and how would you investigate such a case?

4. Give in detail the treatment of—

(a) congenital syphilis, (b) acquired syphilis

Or,

5. Discuss the pathology of tumours of the urinary bladder. Give a short general account of their treatment.

MIDWIFERY

Examiners— { DR. BAMANDAS MUKHERJEE, L.M.S. (Convener).
 ,, NARENDRANATH BASU, L.M.S.
 ,, SATINATH BAGCHI, M.Sc., M.B., M.O.
 LT.-COL. P. FLEMING GOW, I.M.S., F.R.C.S.(E.), D.S.O.
 DR. MANINDRANATH SARCAR, M.B., F.R.C.S.E.
 MAJOR S. A. MC SWINEY, M.D., F.R.C.S.I., M.C.O.G.,
 I.M.S.

FIRST PAPER

The figures in the margin indicate full marks.

First Half

1. What are the common forms of birth injury of the new-born child? How are they caused? 60

2. How would you supervise the condition of the mother and child in the first week of the puerperium? How would you judge that both are progressing satisfactorily? 65

Second Half

3. Describe the origin and microscopic appearance of a fibroid tumour of the uterus. Describe the operative treatment. What factors influence you in your selection of each particular operation? 60

4. You are called to a primipara who has been in labour for twelve hours,—tired but otherwise in good condition. Labour pains occur every eight minutes and last fifteen seconds;—head fixed, R.O.A. No disparity can be detected between the size of the head and the pelvis. The foetal heart sounds are 140 per minute. Vaginal examination shows: the os is two fingers dilated; the membranes are ruptured; the cervix is rigid; the vertex is presenting and there is no caput.

Describe how you would treat the case.

65

SECOND PAPER

The figures in the margin indicate full marks. .

First Half

1. Describe the mechanism of the Third Stage of Labour. Define 'Retained Placenta' and 'Adherent Placenta'. 60

2. Describe the results to mother and child which may ensue from disproportion between the fetal head and the pelvis. 65

How can disproportion be diagnosed—

- (a) in the later months of pregnancy,
- (b) after labour has been in progress for some hours?

Second Half

3. Discuss the indications for the use of the following drugs in obstetrical practice: - 60

- (1) Chloral Hydrate,
- (2) Morphia,
- (3) Posterior Pituitary Extract,
- (4) 'Luminal'.

4. Retroversion of the Uterus. Describe the etiology, symptoms, and signs of this condition. When would you recommend surgical treatment for this condition?

Or,

Describe the changes which occur in the Fallopian tube in Tubal Pregnancy and the possible termination of this condition.

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D. P. H. Examination

May, 1934

BACTERIOLOGY AND PARASITOLOGY

Examiner— { DR. C. C. BOSE, B.A., M.B.
CAPT. C. L. PASRICHA, M.S.

The figures in the margin indicate full marks.

1. State what you know about the bacteriology of Cerebrospinal Fever and its mode of spread. 12
What laboratory investigations would you like to make before allowing a convalescent patient to return to his duties?
2. Describe the morphology and life-history of *Endamoeba histolytica*. How would you differentiate it from other intestinal amoebae? 12
3. Write short notes on the life-histories of— 12
 - (i) *Schistosoma hæmatobium*,
 - (ii) *Trichinella spiralis*, and
 - (iii) *Phlebotomus argentipes*.
4. Mention the different types of immunising reagents used in prophylactic immunisation. What data would you require to determine the suitability of a particular reagent in preventive work? 14

CHEMISTRY AND PHYSICS, ETC.

Examiner—DR. B. B. BRAHMACHARI, M.B.

All the questions are to be answered.

The figures in the margin indicate full marks.

1. Give a brief description of the composition and structure of the following rocks: granite, gneiss, basalt, laterite, sandstone, limestone, dolomite, shale.
Indicate generally where they occur in India.
2. By what methods may the 'oxygen demand' of water and sewage be estimated? 12
Describe one of these methods in detail. State what results you would expect by this method in the case of—
 - (a) an average sample of river water;
 - (b) a treated sewage effluent.
3. What are the two chief gaseous disinfectants which are commonly used for destroying rats and insects in public practice? 12
In what concentrations are they used for these purposes?
Describe how the concentration would be determined in the hold of a ship undergoing deratisation.
Give the chemical details of the analysis for one of these gases.
4. Describe in detail one analytical method for determining— 12
 - (a) the rancidity of a specimen of edible oil or fat;
 - (b) the 'staleness' of a specimen of flour.What results would you expect to obtain in each case?

HYGIENE AND SANITATION, INCLUDING SANITARY ENGINEERING

Examiner—SIR HASSAN SUHRAWARDY, KT., O.B.E., LL.D., M.D., F.R.C.S.I.,
D.P.H.

All the THREE questions are to be answered.

The questions are of equal value.

1. In what different ways does 'drainage' affect the incidence and control of malaria? Discuss the circumstances under which malaria increases or diminishes as a result of drainage, irrigation, and inundations. What may be the result of such measures in a province like Bengal or the Punjab?

Under what conditions would you advise or discourage 'jungle clearing' as an anti-malarial measure?

2. Discuss the Tuberculosis menace amongst the student community of India. Mention the points which, in your opinion, are the causative factors. What preventive measures would you advise?

3. What do you understand by the term 'activated sludge'? There is a colony of 30,000 people and there is a sewerage system in existence. Describe a scheme to purify the sewage of this colony, rendering the effluent innocuous. Discuss its disposal in a hilly country and in the plains, mentioning its effect on Fish and Agriculture.

EPIDEMIOLOGY AND INFECTIOUS DISEASES

Examiner—DR. R. B. KHAMBAFA, D.P.H., L.R.C.P.

The questions are of equal value.

All the FOUR questions are to be answered.

1. What do you understand by the term 'missed' cases of infection? What is the importance of early recognition of such cases in the epidemiology of infectious diseases? Give instances and describe detailed measures of prevention and control, taking one particular disease as an example.

2. What do you understand by the terms 'anti-parasitic' and 'anti-larval' measures? Describe these measures in detail for combating malaria. What are the important points to be noted in choosing a 'larvicide'?

3. An epizootic of rats has occurred in a cargo boat carrying jute and gunny bags from Calcutta to a certain port in Europe. Describe the measures which the Port Health Authority of that port in Europe should take against prevention of an infectious disease breaking out in that port.

4. In a town containing a population of one 'lakh' of people you are asked to give a scheme for the prevention and control of Tuberculosis. The cost of the scheme must not exceed Rs. 30,000. Give details of your scheme.

SANITARY LAW, VITAL STATISTICS, AND PUBLIC HEALTH ADMINISTRATION

Examiner—TARAKNATH MAJUMDAR, L.M.S., D.P.H., D.T.M.

The questions are of equal value.

1. What are the diseases the notification of which is required under the Infectious Diseases Notification Act of 1889? What diseases are notifiable under the Calcutta Municipal Act of 1923? What are the general provisions of the Public Health Act of 1875 and the Calcutta Municipal Act of 1923 against the spread of infection?

2. A town in Bengal with a population of 200,000 at the 1931 census returned the following registered figures:

Deaths 6,750.

Births—4,132

Deaths from Cholera	...	...	...	387
" " Smallpox	...	...	...	67
" " Plague	...	...	...	1
" " Tuberculosis	...	...	...	579
" " Malaria	...	...	...	110
" " Kala-azar	...	...	...	17
" " Enteric Fever	.	.	.	98
" " Respiratory Diseases	...	...	...	1,008
" " Dysentery and Diarrhoea	...	...	...	621
Deaths in infants under 1 year	...	...	...	720

Tabulate the crude birthrate, deathrate, infantile mortality, and the deathrate from the various diseases per 1,000 (per mille).

Write a short report on the health of the town on the data given.

3. A mela is going to be held for 1 week in a non-sewered town in Bengal where about 40,000 pilgrims are expected to come. The population of the town is 100,000. The water supply of the town consists of tanks and wells only. You have got a fund of Rs. 5,000 for the mela. What arrangements will you make to safeguard the health of (1) the pilgrims, and (2) the permanent local residents?

Give a detailed account of the staff you would employ. How would you apportion the cost, and under what heads?

September, 1934

BACTERIOLOGY AND PARASITOLOGY INCLUDING MEDICAL ENTOMOLOGY, PROTOZOOLOGY, HELMINTHOLOGY, AND IMMUNOLOGY

Examiners— { DR. C. C. BOSE, B.A., M.B.
CAPTAIN C. L. PASRICHA, L.M.S.

The questions are of equal value.

First Half

1. There has been a case of bubonic plague in a house. What laboratory investigations would you make to confirm the diagnosis?

2. Give briefly the life cycle of the parasite of Malignant Tertian Fever in the mosquito and man. Illustrate your answer with drawings.

Second Half

3. Contrast the naked eye and the microscopic appearance of *Ancylostoma duodenale* and *Necator Americanus*. How would you diagnose infection with these worms?

4. Discuss briefly the different types of Immunity. Outline the methods employed for producing artificial immunity, giving instances of diseases in which such immunity is successful.

CHEMISTRY AND PHYSICS, ETC.

Examiner-- DR. B. B. BRAHMACHARI, M.B.

The questions are of equal value.

1. How are monsoons caused in India? What are the average rain-falls during the monsoons in Calcutta? Calculate the area of land that will be necessary for collecting rainwater to supply a community of 500 persons at the rate of 25 gallons per head per diem, the available annual rainfall being 24 inches.

2. Compare the characters of good effluents (a) from septic tanks, (b) from septic tanks followed by filtration, (c) from activated sludge plants. What standards of purification would you demand for sewage if it is discharged (i) into a fishing tank, (ii) near the ghat of a tidal river?

3. What is Iodine value of a fat or an oil? How would you analyze mustard oil for estimating its Iodine value? How is the Iodine value of mustard oil affected by adulteration with (a) castor oil, (b) groundnut oil, (c) sesamé oil, (d) niger seed oil?

4. What is bleaching powder? How is it manufactured? How much available Chlorine should it contain? How would you estimate it? Give equations of the reactions in your process of analysis.

5. What is Carbohc Acid? How is it manufactured? What are the characters of pure Carbohc Acid? How would you make an accurate 1 in 100 solution of it in water?

HYGIENE AND SANITATION INCLUDING SANITARY ENGINEERING

Examiners-- SIR HASSAN SUHRAWARDHY, Kt., O.B.E., LL.D., M.D.,
F.R.C.S.I., D.P.H.

All the THREE questions are to be answered.

The questions are of equal value.

1. (a) What is the practical importance of sunlight as disinfectant and as a vitalizing agent?

(b) Describe the method of application and mention the relative efficiency as a disinfecting agent of saturated and superheated steam and dry heat.

2. What methods would you adopt to control the anopheles ludlowii menace to Calcutta?

Mention the species of malaria carrying mosquito which spreads malaria through defects in the plumbing system of a town, and describe the measures to remedy these defects. How would you differentiate this species in its adult form from *A. ludlowii*? Which is more dangerous, and why?

3. Describe the various ways in which cholera spreads during fairs (mela) and festivals. What precautionary measures should be taken to prevent and control cholera epidemics?

EPIDEMIOLOGY AND INFECTIOUS DISEASES

Examiner—DR. R. B. KIAMBATA, D.P.H., L.R.C.P.

The questions are of equal value.

All the THREE questions are to be answered.

1. What is the ætiology of 'Yellow Fever'? Do you consider that India is in danger of being attacked by this disease? If so, what steps should be taken by Health Authorities to prevent a possible invasion?

2. How do you diagnose 'Leprosy'? In a town having a population of 1,000,000 there are many lepers, and you are asked to devise a scheme for dealing with this leprosy problem, a sum of Rs. 25,000 being placed at your disposal. What measures would you recommend to prevent the spread of the disease?

3. (a) What are 'toxins', 'anti-toxins', and 'toxoids'? What part do they play in inducing immunity in man?

(b) What are 'vaccines'? How do you 'sensitise' and 'detoxicate' them, and for what purpose?

(c) What is 'lipo-vaccine'?

SANITARY LAW, VITAL STATISTICS, AND PUBLIC HEALTH ADMINISTRATION

Examiner—DR. TARAKNATH MAJUMDAR, L.M.S., D.P.H., D.T.M.

The questions are of equal value.

1. Give a brief summary of the legal powers for dealing with adulterated foods and drugs in (a) Calcutta, (b) Bengal municipalities.

2. You are appointed Health Officer of a town in India with a population of 2,00,000. You are asked to put up a child welfare and maternity scheme for the town at a cost not exceeding Rs. 25,000 annually. Put up your scheme, giving details of staff and cost.

3. (a) Write short notes on—

- (1) Comparative mortality figure;
- (2) Crude death rate;
- (3) Life tables;
- (4) Birth rate.

(b) The vital statistics of a city in India for the year 1930 are given below :—

Total Population	...	...	...	10,77,264
Total number of deaths	...	...	...	31,135
Total number of births	...	...	...	23,614
Total number of deaths under 1 year	...	...	...	6,203
Total number of deaths from Cholera	...	...	...	1,765
" " " " " Smallpox	...	...	...	1,818
" " " " " Plague	...	...	...	0
" " " " " Typhoid Fever	...	...	...	729
" " " " " Tuberculosis	...	...	...	2,756
" " " " " Malaria	...	...	...	714
" " " " " Kala-azar	...	...	...	315
" " " " " Influenza	...	...	...	419

Calculate the birth rate, death rate, infantile mortality, and the death rate per mille from each of the diseases mentioned above. Write a very brief report about the prevalence of infectious diseases in the city on the data given above.

I. E. Examination,

(A) 1934

MATHEMATICS

(Computation, Mensuration, and Statics)

Examiner - MR. J. M. BOSE, M.A., B.Sc., (EDIN).

The questions are of equal value.

First Half

Only FOUR questions to be attempted from this half.

1. It is arranged that the three partners in a firm shall receive respectively 30%, 25%, and 20% of the annual profits, and the rest shall be divided between the Reserve Fund and the Employees' Pension Fund in the ratio of 2:1. For the year 1933 the total profits were £47,821 18s. How much of this went to each partner and to each fund?

2. One ton of lead is rolled into a sheet of uniform thickness 0.42 in. Find approximately in square yards the area of the sheet, having given that 1 cu. ft. of lead weighs 710 lbs.

3. Find the value of the following correct to 3 places :—

$$(1) \quad 2.154 \times \sqrt[3]{789.5604} \times \sqrt[3]{32.689} \\ \sqrt{314.568}$$

(2) A copper wire of radius r_1 is coated with iron to an outside radius r_0 , and the self-induction in henries per mile is found to be

$$3.11 \times 10^{-4} \mu \log_e \frac{r_0}{r_1}.$$

Find how much coating of iron is necessary for a copper wire of radius 0.0122 in. so as to have a self-induction of 0.04. The permeability μ may be taken to be 300.

4. Prove that the volume of a right circular cone is one-third that of a cylinder standing on the same base and of the same height.

From a circular piece of paper of radius 5 inches a sector containing an angle of 29° is removed and the rest folded into a cone. Find its volume.

5. Find the greatest angle and the in-radius of a triangle whose sides are 17, 20, and 27.

6. A man walking in a level plane towards a tower observes at a certain point the angular height to be 10° and after going 50 yards nearer the elevation is found to be 15° .

Find to 4 decimal places the height of the tower in yards.

Second Half

Only THREE questions to be attempted from this half.

1. Enunciate the principle of the triangle of forces. How can it be generalized for the equilibrium of any number of coplanar forces acting at a point?

A rope, 10 feet long, is fastened to two points A , B and carries a weight of 40 lbs. which can slide smoothly along the rope. The co-ordinates of B with respect to horizontal and downward vertical axes at A are 8 feet and 1 foot. Give a geometrical construction for finding the position of equilibrium and obtain by measurements from your figure, or otherwise, the tension of the rope.

2. Find the necessary conditions of equilibrium of a set of coplanar forces. Are these conditions also sufficient?

A uniform ladder inclined at 60 degrees to the horizon rests against a smooth wall while its foot is on a rough horizontal plane. When a man has ascended to the middle point of the ladder, it commences to slip. Find the coefficient of friction.

3. Obtain a formula for finding the distance of the centre of gravity of a number of particles from a plane, the distances of the particles from the plane being z_1, z_2 , etc.

Squares are described on two sides AB, BC of a rectangle $ABCD$, the lengths of the sides being a and b inches. Find the distance of the centre of gravity of the figure from AB .

4. Find the mechanical advantage of a system of pulleys in which each pulley is supported by a separate string, one end of which is attached to a fixed point of support and the other end to the pulley next in order (take all the pulleys to be of equal weight). Give a neat figure.

A rope passes round a pulley and its ends are coiled opposite ways round two drums of different radii on the same horizontal axis. A person pulls vertically upon one part of the rope with a force P . What weight attached to the pulley can he raise, supposing the parts of the rope to be parallel?

(Calculus and Plane Geometry)

Examiner—PROF. NIKHILRANJAN SEN, PH.D., D.Sc.

The questions are of equal value.

First Half

Only FOUR questions to be attempted from this half.

1. Explain the difference between the differential and the differential coefficient of a function.

How does the differential coefficient of a function measure the slope of the curve it represents?

Differentiate from first principles $\sin x$ and $\log x$.

Differentiate

$$x \log \sin x, \quad \frac{x}{\sqrt{a^2 - x^2}}.$$

If

$$y = 2\sqrt{au} \text{ and } u = a^{v^n}$$

find

$$\frac{dy}{dx}.$$

2. Prove Maclaurin's theorem regarding the expansion of a function. Prove by expansion that if c is large, the curve ...

$$y = \frac{1}{2}c \left(e^{\frac{x}{c}} + e^{-\frac{x}{c}} \right)$$

becomes a parabola to the approximation.

3. Obtain the conditions that a curve may have a maximum or minimum ordinate at a point.

Show that the curve

$$y = xe^x$$

has a minimum ordinate when $x = -1$.

4. Explain what is meant by integration. In what way does integration differ from the process of the summation of an Algebraic series?

Evaluate the following

$$\int \frac{x \, dx}{\sqrt{a+bx}}, \quad \int \frac{dx}{x\sqrt{2ax-a^2}}, \quad \int \frac{x \, dx}{c}$$

5. Explain the rule for integration by parts. What must be the nature of the integrand so that this method may be applicable?

Evaluate

$$\int x \tan^2 x \, dx \quad \int x^n \log x \, dx.$$

Show how to evaluate

$$\int \frac{x^{m+1} dx}{\sqrt{a+cx^2}},$$

when m is given.

Second Half

Only THREE questions to be attempted from this half.

1. Prove that an equation of the first degree represents a straight line. How many disposable constants does the equation of the straight line contain?

Find the equations of the diagonals of the parallelogram formed by

$$x=a, x=a', y=b, y=b'.$$

2. Find the length of the perpendicular drawn from a given point on a straight line.

Find the locus of P such that if PM and PN are perpendiculars let fall from P on two fixed straight lines, $PM+PN$ is constant.

3. Find the equation of the tangent at a point (x', y') of the circle

$$(x-a)^2 + (y-b)^2 = c^2.$$

Find the tangents from the origin to

$$x^2 + y^2 - 6x - 2y + 8 = 0.$$

4. Find the condition that the line

$$y + mx + c$$

may touch the parabola.

$$y^2 = 4ax.$$

Find the
given angle.

intersection of tangents to a parabola which cut at a

5. Prove that if the two circles

$$x^2 + y^2 + 2gx + 2fy + c = 0, \quad x^2 + y^2 + 2g'x + 2f'y + c' = 0$$

cut one another orthogonally,

$$2gg' + 2ff' + c + c' = 0.$$

If AB be a diameter of a circle, the polar of A with respect to any circle which cuts the first circle orthogonally will pass through B .

GENERAL CHEMISTRY

Examiners— { Mr. N. N. SEN, M.Sc. (Cal.), A.I.C., A.R.S.M. (Lond.)
Dr. M. QUADRATI-KHUDA, D.Sc.

The questions are of equal value.

Only THREE questions to be attempted in each half.

First Half

1. Why do we believe that the expression $PI = RT$ is identical for gaseous and osmotic pressures?

0.2432 gm. of a substance dissolved in 100 c.c. of water at 27°C . develops an osmotic pressure equal to 25 mm. of mercury. Calculate the molecular weight of the substance.

2. Give an account of the naturally occurring and artificially prepared compounds of magnesium that are used in the arts and industries. How is magnesium prepared, and what are its chief properties and uses?

3. Starting with chrome ironstone how would you prepare the following:—

(a) Potassium chromate ; (b) Potassium dichromate ; (c) Potassium chromic alum ; (d) Chromium sesqui-oxide.

State the properties and uses of each of the above compounds.

4. Give the names and formulas of the natural compounds of iron from which the metal is usually extracted, and describe the chief commercial forms of iron.

Second Half

5. Write explanatory notes on the following:—

(a) Basicity of an acid ; (b) Smithell's cold flame ; (c) Ionization constant ; (d) pH value of a solution ; (e) Isotopes.

6. How is sulphuric acid manufactured on a large scale? Make a comparative statement of the advantages and disadvantages of using one or the other method of making this substance. Clearly explain by equations the reactions that take place during the formation of the acid.

7. Summarize your knowledge regarding the oxyacids of chlorine. Give the methods most suitable for the preparation of the sodium or potassium salts of these acids in pure condition.

8. How are the following substances prepared? Give their chief characteristic properties and uses. (a) sodium carbonate ; (b) sodium thiosulphate ; (c) calcium cyanamide ; (d) helium.

PRACTICAL

Examiners-- { Mr. N. N. SEN, M.Sc., (Cal.), A.I.C., A.R.S.M., (Lond.)
 { Dr. QUADRATI-KHUDA, D.Sc.

First day.

1. Make a qualitative analysis of the sample 'A', giving an approximate idea of the composition of the mixture which may not contain more than three radicals, acid and basic.

2. Determine the strength of the given sulphuric acid solution in terms of grammes of H_2SO_4 per litre.

3. Submit your practical note-book.

Second day

1. Make a qualitative analysis of the sample 'B', giving an approximate idea of the composition of the mixture which may not contain more than three radicals, acid and basic.

2. Determine the strength of the given sodium carbonate solution in terms of grammes of Na_2CO_3 per litre.

3. Submit your practical note-book.

PHYSICS

Examiners-- { Mr. A. C. CHAKRABARTI, M.Sc., M.A. (CANTAB)
 { Dr. SNEHAMAY DUTT, D.Sc.

The questions are of equal value.

Only THREE questions to be attempted from each half.

First Half

1. Explain, with the help of the hysteresis diagram, the difference in the behaviours of steel and soft iron in a magnetic field. How would you determine the relation between I and H experimentally?

2. State Lenz's law of Electromagnetic Induction.

Describe and explain the action of a Ruhmkorff's coil. What is the use of the condenser attached to the primary?

3. State the laws of Electrolysis. Briefly describe the process of electroplating.

A spoon having an area of 10 sq. cms. is to be coated with silver .1 mm. thick. Calculate the minimum time that would be required knowing that for good silver deposit at least 50 sq. cms. must be allowed per ampere current. E.C.V. of silver = .001118 gm./coulomb. Density of silver = 10.5 gm./c.c.

4. With diagrams and short descriptions explain the working of (1) Hadley's sextant, (2) an epidiascope.

Second Half

5. Obtain the formula for refraction through two thin lenses separated by a distance. Show that the combination is equivalent to a single thin lens under certain restrictions.

6. Describe Bunsen's Ice Calorimeter.

In an experiment on the specific heat of diamond the mercury receded 4.36 cms, in the tube whose diameter was .04 cm. How much heat did the diamond give out? At 0°C . density of ice = .91743 and that of water = .99987.

7. Explain James Thomson's hypothesis of continuity of state. Describe suitable experiments in support of the hypothesis.

8. Briefly explain Victor Meyer's method of measuring vapour density.

What would be the density of moist air on a day when the temperature is 30°C . and barometric pressure 755 mm., the partial pressure of water vapour in the air being 15 mm.? Density of dry air at N.T.P = .001293 gm./c.c.

(B) 1934

MATHEMATICS

(Calculus and Plane Geometry)

Examiners { Mr. J. M. ROSE, M.A., B.Sc. (Edin.).
Dr. S. C. KAR, D.Sc.

The questions are of equal value.

Only THREE questions to be attempted from each half.

First Half

1. Explain what is meant by the order of small quantities.

Each of the two sides of a triangle are small quantities of the first order. What is the order of the magnitude of its area (1) if the contained angle is finite, (2) if it is a small quantity of the first order?

2. Differentiate the following

$$\tan^{-1} \frac{2x}{1-x^2}, \log x + \sqrt{x^2 \pm a^2}, \log (\cos e^{\sin^{-1} x}).$$

If

$$y = 1 + \frac{x}{1 + \frac{x}{1 + \frac{x}{1 + \dots \infty}}}.$$

Find

$$\frac{dy}{dx}.$$

3. A window has the form of a rectangle together with a semi-circle on one of its sides as a diameter, and its perimeter is 30 ft. Find its dimensions so that it may admit the greatest amount of light.

4. Evaluate the following

$$\int x^n \log x \, dx, \quad \int_a^{\beta} \sqrt{(x-a)(x-\beta)} \, dx \quad \int_0^{\frac{\pi}{2}} \sin^n \theta \, d\theta$$

Find the area of the curve

$$ax^2 + 2hxy + by^2 = 1.$$

5. Prove Guldin's theorems regarding the volume and the surface generated by the revolution of a plane curve round an external axis.

Find the volume generated by the revolution of an ellipse about an external axis whose distance from its centre is c .

6. Find the position of the centre of gravity and the moment of inertia of a right circular cone about its axis.

Second Half

1. Find (i) the equation of the straight line which bisects at right angles the join of the points (5, 3) and (-3, 5), and (ii) the length of the perpendicular to the straight line from the point (4, -1).

2. Prove (i) that the straight lines,

$$\begin{aligned} 15x - 18y + 1 &= 0, \\ 12x + 10y - 5 &= 0, \\ 6x + 66y - 17 &= 0, \end{aligned}$$

are concurrent, and (ii) that the third line bisects the angle between the other two.

3. A tangent to the parabola, $y^2 = 12x$, makes an angle of 45° with the straight line, $y = 3x + 7$. Find (i) its equation, and (ii) the co-ordinates of its point of contact.

4. The circle, $x^2 + y^2 = r^2$, intercepts on the straight line, $7x - y + 30 = 0$, a chord which subtends a right angle at the centre. Find (i) the radius r , and (ii) the middle point of the chord.

5. Prove that the straight line, $px + qy = r$, is a normal to the ellipse,

$$\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1,$$

$$\text{if} \quad \frac{a^2}{p^2} + \frac{b^2}{q^2} = \frac{(a^2 - b^2)^2}{r^2}.$$

6. Prove that the equation,

$$13x^2 - 18xy + 37y^2 + 2x + 14y = 2,$$

represents an ellipse, and find (i) its eccentricity, and (ii) the co-ordinates of its centre.

HYDROSTATICS, DYNAMICS, AND APPLIED MECHANICS

Examiners— { PROF. C. V. MILLER, A.C.G.I., B.Sc., A.M.I.STRUCT. E.
MR. KHAGENDRANATH CHAKRABARTI

The questions are of equal value.

Only THREE questions to be attempted from EACH half.

First Half

1. Prove that the resultant thrust on any plane area exposed to a homogeneous liquid under gravity is equal to the weight of a column of the liquid, whose base is equal to the area and whose height is equal to the depth of the centre of mass of the area below the effective surface of the liquid.

The dam of a reservoir is 200 yards long and its face towards the water is rectangular and inclined at an angle of 30° to the horizon. Find the thrust acting on the dam when the water is 30 ft. deep.

2. Find the conditions of equilibrium of a body floating freely in a liquid, and deduce that a solid cannot float in a liquid of less density than its own.

A ship of mass 1,000 tons goes from fresh water to salt water. If the area of the section of the ship at the water line be 15,000 sq. ft. and her sides vertical where they cut the water, find how much the ship will rise, taking the sp. gr. of sea-water to be

3. Explain the formula $P = mf$.

A bullet of mass 10 grams is moving with a velocity of 200 cm. per second and meets a sandbank offering some resistance to the passage of the bullet. If the bullet moves through 10,000 cm. before coming to rest, find the resistance of the sand supposed to be uniform.

4. Enunciate and prove the principle of Conservation of Linear Momentum.

A jet of water (10 cwt. of water per minute) strikes a wall at right angles with a velocity of 60 ft. per second. If the velocity of the water is destroyed on reaching the wall, find in pounds weight the thrust of the jet on the wall.

5. Find the greatest height attained by a projectile and its horizontal range when u is its velocity of projection and α the angle of projection.

A body is thrown from the top of a tower 96 ft. high with a velocity of 80 ft. per second at an elevation of 30° above the horizon. Find the horizontal distance from the foot of the tower to the point where it hits the ground.

Second Half

1. A tie-bar connects two walls 30 feet apart by means of washers and nuts on the outside of the walls. The tie-bar is heated until it expands $\frac{1}{8}$ of an inch. The nuts at the ends are then screwed to take up the expansion, and the bar is allowed to cool. Find the stress in the bar due to its contraction (1) when the walls do not move at all, (2) when each wall gives way $\frac{1}{32}$ of an inch. Take E as 30×10^6 lb. per sq. inch.

2. A beam, 30 feet long, rests on two supports, each support being 5 feet from the end. A weight of 2 tons hangs from one end of the beam, 1 ton from the other end, and a weight of 4 tons hangs from the mid point of the beam. Calculate the reactions at supports, the shearing forces between the loads, and the bending moment at each load. Draw the diagrams of bending moment and shearing force.

3. What do you understand by the strength of a beam and the stiffness of a beam?

A timber beam 5 inches wide, 10 inches deep, and 15 feet long rests on supports at its ends and carries a load of $1\frac{1}{2}$ tons in the centre. If E is 600 tons per square inch find the strength and stiffness of the beam.

4. A rolled steel joist has flanges 1 inch thick and $7\frac{1}{2}$ inches wide, its web is $\frac{1}{4}$ an inch thick and the total depth of the joist is 20 inches. This joist carries an uniformly distributed load of 2 tons per foot run including its own weight over a span of 18 feet. Find the maximum fibre stress on its cross section.

5. A dam 50 feet high is 10 feet thick at the top and 25 feet at the bottom, the boundaries of a vertical section being straight lines. The vertical face supports the water which reaches to the top of the dam. Find the stress on the base of the dam. Weight of masonry is 125 lb. per cubic foot and weight of water 62.5 lb. per cubic foot.

APPLIED PHYSICS

{ MR. A. C. CHAKRABARTI, M.Sc., M.A. (CANTAB).
 { PROF. P. N. GHOSH, M.A., PH.D. Sc.D., F. INST.P.

The questions are of equal value.

Only THREE questions to be attempted from EACH half.

First Half

1. Explain briefly Forbes' Bar method of measuring the thermal conductivity of a solid.

2. Explain on the elementary Kinetic Theory why the conductivity of a gas should be independent of its pressure. How can this be verified experimentally?

3. The velocity of sound in air at N.T.P. is 33180 cms. sec. The specific heat of air at constant pressure is .2375. Find its C_v .

4. Define entropy, and explain how in nature entropy tends to a maximum. Prove that for a reversible cycle entropy remains constant.

Draw $p-v$ and $\theta-\phi$ diagrams for a Carnot's cycle, and interpret the areas in each diagram.

Second Half

5. Two condensers of capacities one and ten microfarads respectively, originally uncharged, are set up in series and connected to a battery whose terminals have potentials +100 and -100 volts relative to earth. If the wire between the two condensers is earthed, how much electricity will flow through the earthing wire?

6. Explain Ampère's theorem.

Calculate the torque that will act on a coil of 10 turns, elliptical in shape, carrying a current of 10 amps, when placed at an angle of 45° in

a magnetic field of 1,000 lines/sq. cm. Major axis of the coil = 20 cms.; minor axis = 15 cms.

7. What are the different types of instruments used for measuring alternating current? Explain the action of one of them in detail.

8. Explain the methods you would adopt in measuring capacities of the following orders:—

(1) .01 microfarad, (2) 1 microfarad, (8) 100 microfarads.

MECHANICAL ENGINEERING

Examiners— { Mr. P. C. GANGULY, B.Sc. (GLASS), B.E.S.
 „ K. CHATTERTON, B.Sc.
 „ B. N. BANERJEE.

The questions are of equal value.

Only THREE questions to be attempted from EACH half.

First Half

1. What do you mean by the term 'inversion', as applied to a kinematic chain? What mechanisms are obtained by the inversion of a single-slider-crank chain? Describe a quick-return motion derived from the above chain, and give, with proof, a graphical method for obtaining the speed of the tool at any instant.

2. Sketch the Peaucellier straight line mechanism, and prove that a certain point on it has a straight line motion.

3. Establish the equation $\frac{T_1}{T_2} = e^{u\theta \operatorname{cosec} \alpha}$ where T_1 and T_2 are the tensions on the tight and slack sides respectively of a rope transmitting power, θ the angle of lap, 2α the angle of the groove in which the rope runs, and u the coefficient of friction. Find the horse-power which can be transmitted by a hemp rope 1 inch in diameter at a speed of 70 feet per second if the rope is broken with a pull of 5,700 lbs., and it is desired to have a factor of safety of 30. The angle of the groove in which the rope runs is 60° and the coefficient of friction may be taken as 0.25 and the angle of lap 180° .

4. An epicyclic train of wheels is constructed as follows: A fixed annular wheel A and a smaller concentric rotating spur wheel B are connected by a compound wheel A_1B_1 , the portion A_1 gearing with the wheel A and B_1 with B . The compound wheel revolves on a stud which is carried round on an arm which revolves about the axis of A and B . A has 130 teeth, B 20, and B_1 80, the pitch of the teeth on A and A_1 being twice the pitch of the teeth on B and B_1 . How many revolutions will B make for one revolution of the arm?

5. A follower, with a roller $\frac{1}{4}$ inch diameter at its end, is actuated by a cam in a vertical straight line, the travel being 6 inches. The line of motion of the follower is $2\frac{1}{4}$ inches to the right of the axis of the cam shaft. In the lowest position the centre of the roller at the end of the follower is 4 inches from the centre of the cam shaft. The follower rises with simple harmonic motion during a third of a revolution of the cam shaft, remains at rest during the next third of a revolution, and returns to its lowest position during the remaining third of a revolution with uniform motion. Draw the profile of the cam. Explain your construction clearly.

Second Half

1. Draw a diagrammatic sketch of a simple form of Watt governor. In an unloaded governor of this type estimate the change in height of the balls when the speed increases from 100 to 120 R.P.M.

2. Estimate the minimum height of chimney required to produce a draught of $\frac{1}{8}$ in. of water if 24 lbs. of air are supplied per lb. of fuel burned, the mean temperature of the gases inside the chimney being 600°F . and the temperature of the external air 80°F .

3. The following particulars were obtained from a trial on a triple expansion steam engine:—

Weight of steam used per hr. (air pump discharge)—10,013 lbs.

Weight of steam used per hr. in jackets—1,240 lbs.

Temperature of jacket drainage— 368.5°F .

Steam pressure at boiler stop valve—170 lbs./ \square " absolute.

Dryness fraction—0.95.

Temperature of exhaust— 170°F .

Total I.H.P.—700.

Weight of circulating water per mm.—5,000 lbs.

Rise of temperature of circulating water— 30°F .

Temperature of air pump discharge (hot well temperature)— 110°F .

Draw up a heat balance for this engine, and calculate the steam consumption per I.H.P. hr.

4. Explain, with the aid of a sketch, an experimental method of determining the dryness of steam.

In a throttling calorimeter the following data were obtained:—

Steam pressure in main steam pipe—150.3 lbs./ \square " gauge.

Barometer—30".

Temperature of steam in calorimeter— 260°F .

Reading of manometer—4" of mercury.

Determine the dryness fraction of the steam, assuming the specific heat to be 0.48.

5. The travel of a slide valve is 5", lead at head end 0.25", cut off 0.7, and release 0.95 of the stroke for both ends. If the connecting rod is 4 cranks long find—

- (a) outside and inside laps,
- (b) angle of advance,
- (c) maximum openings to steam,
- (d) lead at crank end.

ELECTRICAL ENGINEERING

Examiners— { PROF. M. R. SENGUPTA
MR. S. C. REDCLIFT
,, A. K. DAS, B.Sc. (Manchester)

The questions are of equal value.

Only THREE question are to be attempted from EACH half.

First Half

1. Find the form factors of a rectangular wave and a sine wave.

Compare the relative heating effect of the two currents having rectangular and sine wave forms of the same maximum value.

2. Explain the following terms clearly: (i) a pure resistance, (ii) a purely inductive reactance, (iii) a purely capacitive reactance, (iv) an impedance. Explain by means of vector diagrams that capacitive reactance and inductive reactance are opposite in phase. Also show that impedances in a series circuit are vectorially added.

3. An alternating current 10 amperes is passed through a choking coil with an inductance of 0.01 henry and a negligible resistance, and a non-inductive resistance of 6.28 ohms in series with the choking coil. The frequency = 100.

Find—

- (a) The reading of a voltmeter across the choking coil;
- (b) the reading of a voltmeter across the resistance;
- (c) the reading of a voltmeter across the whole;
- (d) the angle by which the current lags behind the P.D. across whole.

4. A 15-ampere arc lamp requires a P.D. of 50 volts across its terminals and has to be connected to 100 volt 50 cycle mains. Calculate the value of the inductance to be placed in series with the lamp and the power factor of the arrangement, assuming the power factor of the lamp itself is unity and that of the inductance zero.

Also explain how a condenser could be used to bring the current taken from the mains into phase with the P.D. Calculate the requisite capacity of the condenser.

Second Half

1. (a) Define clearly the following terms: Volt, Ohm, Watt, Joule, Specific Resistance. Prove, step by step, that one horse-power is equal to 746 watts.

(b) A sample of wire 0.036 inch diameter, 11.5 feet long is found to have a resistance of 0.1 ohm. What is the specific resistance of the material per inch cube?

2. (a) Explain the meaning of flux, reluctance, permeability, hysteresis. Illustrate your answers, where possible, by neat and fully explained curves.

(b) An iron ring of 25 cm. mean diameter and 10 sq. cm. cross sectional area has an air gap 1 mm. wide. If $\mu = 600$ and the flux density in the air gap is 21,800 lines per sq. cm., how many ampere turns must there be on the ring?

3. (a) What kind of electric cables are used for the following purposes? Give reasons for your answers:—

(i) For underground cables, such as those from a power station to a sub-station.

(ii) For internal wiring of a dwelling house.

(iii) For connecting a portable table fan or light to the fixed circuits.

Draw a section of each kind of cable you select, on a large scale, and indicate by arrow heads all the materials used.

(b) Calculate the cross sectional area of a copper cable for a 110 volt 5 B.H.P. motor (D.C.), having an efficiency of 75% situated 200 feet from the source of supply. You may assume that the loss in the cable is

not to exceed 3% of the motor output any that $\rho = \frac{0.7}{10^6}$ ohm per inch cube.

4. (a) Write a short account of the Swinburne test. What is it employed for, and what are its limitations?

(b) A 230 volt 10 B.H.P. motor on Swinburne test was separately excited and the following figures obtained:—

- (i) Field excitation—230 volts 1.25 amps.
- (ii) Armature running light at full speed takes 3.4 amps. at 230 volts.

- (iii) With machine at rest, 5 volts produced a current of 80 amps. through the armature.

Calculate the full efficiency.

5. Make a diagram of connections of all the circuits, including the starter, etc., and shewing two methods of varying the speed of each of the following :—

(i) A 10 B.H.P. 4 pole series D.C. motor.

(ii) A 10 B.H.P. 4 pole shunt D.C. motor.

Explain briefly the reasons why the speeds may be varied in each case, and particularly comment on the armature current.

DETAILS OF CONSTRUCTION

Examiners— { Mr PULINBHARI GHOSH, B.Sc., B.E.
 { KILAN BAHADUR MAULVI TUFAZZAL AHMED

First Half

The questions are of equal value in this half.

Only four question are to be attempted from this half.

1. What is meant by bearing capacity of soil? Describe a method of determining it.

Make a neat sketch for the foundation of 20" wall carrying a load of 3 tons per ft. run up to plinth level. Give all necessary calculations.

Height of plinth=2' 6".

Depth of foundation=3' 6".

Safe bearing power of soil=0.9 ton/sq. ft.

2. What is meant by bearing capacity of a pile? How is it determined? Find the average penetration of a pile from the following data :—

Load per ft. length of foundation=16 tons.

Width of foundation=10 feet.

Piles placed 2' 6" centres both longitudinally and transversely.

Pressure borne by soil= $\frac{1}{4}$ ton/sq. foot.

Sectional area of a pile head=36 sq. inches.

Weight of hammer=8 cwt.

Height of fall=5 feet.

Make a sketch showing arrangements of piles in the foundation bed for a length of 5 feet.

3. Draw, to a scale of 2 feet=1 inch, and elevation and a section (through the crown of one of the arches) of two successive arches of brick, 3 rings each, showing the bond in the rings clearly in a two-brick thick wall.

Span of each arch=8 feet.

Rise of arch= $\frac{1}{4}$ span.

Middle pier=2' 6".

Height of springing above floor level=8 feet.

On your drawing write down the following terms in their proper places : Centre of arch, Skewback, Haunch, Voussoir, Spandril, Key, Extrados, Intrados.

4. Write a short essay on the selection of materials, proportioning, mixing, and laying of concrete in connection with important reinforced concrete work.

5. You have been asked to supervise the construction of an ordinary brick building with tee and tile roofing. Draw up a programme of work, and state the points you would particularly note at the various stages during the construction of the building.

Second Half

The figures in the margin indicate full marks.

Only THREE questions to be answered, of which Question No. 1 is compulsory.

Neatness and accuracy of sketches will be considered in awarding marks.

1. Give a cross section, showing all details of an asphalt macadam town road 40 ft. total width, 24 ft. from kerb to kerb and 8 ft. wide footpath on each side. The top of the footpath at the inner end is 3" (3 inches) higher than the centre of the finished road. From the centre of the road towards the sides there is a slope of 1 in 40. A two feet six inches wide and three feet high, inside measurements, brick sewer runs along the centre of the road, the top of the completed sewer being four feet below the top of the road. The walls of the under-ground sewer are 1' 3" thick cement brickwork built on a bed of one foot thick cement concrete, the walls topped over by a slab of 6" thick reinforced concrete. The road will be constructed with two layers of picked jhama soling, 6" of stone metal 1½" gauge and then 3" thick, asphalt grouted covering, finished with asphalt painting with ½" to ¾" stone chips well rolled in. The footpaths will be of one layer of jhama soling and 6" brick khoa finished with rubbish topping with a gentle slope towards the road for drainage. The kerb and channelling will be done with 4 inch thick sandstone slabs laid on a bed of 6" (six inch) thick lime concrete. The width of channelling is one foot and is flush with the road surface. Describe very briefly and systematically all the processes involved in constructing such a road from the beginning to completion. 100

2. Describe with sketches the different methods of fixing door and window chowkats with brickwork, and say which, in your opinion, is the best, and why? What is a lintel? Give a cross section of a reinforced concrete lintel 6" thick and 1' 3" wide in a 1' 8" thick wall over an opening say 5 ft. wide with the outer face being a 5" thick straight arch, and describe the method of constructing such a lintel. 50

3. Give the section at right angles to the joists of a 1½" thick teak planked floor over 3"×3" teakwood burgahs spaced 2 feet apart over R.S. joists 10"×5" spaced 6 feet apart with a ¾" teakwood ceiling underneath the burgahs and the beams cased with ¾" teak planks. Describe and show in the section the method of casing the beams and the method of joining the floor and ceiling planks.

What are treads, risers, nosings, cleats, and stringers in a wooden staircase? Give sketches. 50

4. A hall 35 feet by 20 feet (inside measurements) has to be provided with a skylight 15 feet by 5 feet by 4 feet high at the middle of the hall, the length of the skylight being along the length of the hall. The hall is spanned over by 12"×5" R.S. joists spaced 5 feet apart and is roofed over on 3"×3" teakwood burgahs by a double layer of 1' 6"×1" tiles and 6" lime concrete. The roof of the skylight to be similar. Give a section parallel to the roof joists of the roof with the skylight, the latter having sides of teakwood glazed fanlights 1½" thick in teakwood frame, and

show the method of preventing leakage of the roof at the junction of the skylight. The height of the skylight is to be taken from the top of the roof. The sizes of the scantlings for the frame to be supplied by the examinee.

ESTIMATING

Examiners— { MR. ABDUL JABBAR, B.Sc., B.E.
RAI BAHADUR CHUNILAL SARKAR, B.E.

The figures in the margin indicate full marks.

First Half

Group A

1. Estimate the quantity of earthwork in embankment and cutting for a road from sections given in Plate I attached. 100

Group B

2. Figure in Plate 2 shows the Cast Iron cover to a steam engine cylinder at the stuffing box end. Neglecting the rounded corners, find the weight of the cover if one cubic inch of metal weighs 0.25 lb.

Second Half

Group C

1. From the plan and section of a building given in Plate 3, take out the following quantities, and estimate their cost from the rates given:—

- | | |
|--|----|
| (1) Brickwork in foundation and plinth at Rs. 31-8 per 100 c.ft. | 30 |
| (2) Mild steel work in beams at Rs. 7-8 per cwt. | 15 |
| (3) Teakwood work in chookuts (door and window frames) at Rs. 5-8 per c.ft. (Section of chookuts 5"×3".) | 25 |
| (4) 1½" teak Venetian doors and windows at Re. 1-4 per s.ft. | 30 |

Group D

1. Find the weight of the C.I. Bracket shown in Plate 4, taking the weight of C.I. to be 0.25 lb. per cubic inch. 100

SURVEYING

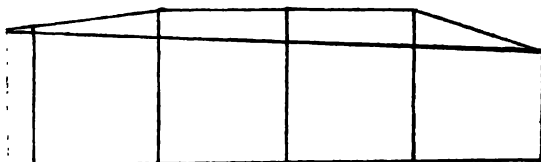
Examiners— { PROF. C. V. MILLER, A.C.G.I., B.Sc., A.M.I.STRUCT.E.
MR. P. W. CRAKER
,, P. B. GHOSH, B.Sc., B.E., A.M.I.E.

The questions are of equal value.

Only FOUR questions are to be attempted from EACH half.

First Half

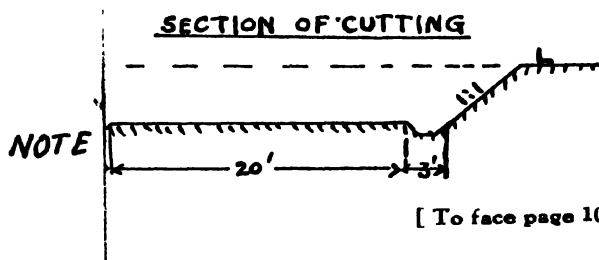
1. A theodolite is set up in a valley at a station D whose reduced level is 76.34 and the height of its telescope axis is measured to be 5.43 feet



DEPTH OF
CUTTING

HT. OF BANK

R. LEVELS	2401	2466	24	2450	
CHAINS	11	12	13	14	15



[To face page 1094

A staff is held on a station B at which the following observations are recorded. The vertical circle reading (elevation) is $23^{\circ} 30'$, the middle wire reading on the staff is 6.75 feet, and the distance along the line of sight from D to B is 255 feet. What is the reduced level of station B ?

2. Three pegs A , B , and C are driven into the ground 100 feet apart in a straight line and tapped so that their tops represent a truly level line. A theodolite is set up very close to A and readings taken on a staff held on A , B , and C give 5.10 feet, 6.16 feet, and 7.56 respectively as readings when horizontal plate bubbles are in the middle of their runs. What is the matter with the instrument?

3. Explain clearly how the telescope axis of a Cooke's reversible level is placed at right angles to the vertical axis of rotation of the instrument.

4. Two points A and D are connected by a traverse survey $ABCD$ and the following records are obtained. $AB=91$ feet, $BC=83$ feet, $CD=52$ feet. The angle BCD is $149^{\circ} 30'$. The whole circle bearings of the lines AB and BC are $193^{\circ} 10'$ and $76^{\circ} 34'$ respectively, determine—

- (1) the latitude and departure of D relatively to A ;
- (2) the length AD .
- (3) the angle BAD .

5. Describe clearly with the aid of a sketch or sketches how you would obtain the bearing of the sun with the aid of a prismatic compass, showing the line of sight between the sun and your eye through the instrument, in the sketch. Assume the sun is about 45° above the horizon when its bearing is being taken.

6. When setting out the centre line of a tunnel between its two ends A and B , an observatory station C is chosen on the top of the hill, from which both A and B are visible, but it is not on the centre line of the tunnel. Let D be a point on a vertical through C . The horizontal projection of the angle ACB is $45^{\circ} 58'$, the vertical angle ACD is $49^{\circ} 45'$, and the vertical angle BCD is $57^{\circ} 42'$. The horizontal projection of CA is 750 yards and of CB 800 yards. Find the horizontal distance between A and B and their difference of level.

Second Half

1. Describe and give a sketch, showing how you would chain over a high embankment of a road which crosses the alignment of your work.

2. With a chain 100 feet long you measured a base line one mile long and a plot of ground the area of which was one acre. On checking the length of the chain it was found to be 3 inches too long. What was the true length of the base line and the true area of the plot?

3. You are appointed to a survey party and are given a theodolite and level. Describe what permanent adjustments of both instruments you would check and put right before commencing work.

4. While running a trial line for a road or railway in open country, a river is reached which cannot be forded at the site where the line crosses it. Describe and give a sketch showing how you would find the distance across to a point on the other bank by the use of a chain or chains and ranging rods only.

5. The centre line of a road or railway is to be deflected through an angle of 30° . Work out the details for setting out a 1° curve with a theodolite, and describe how you would carry out the work.

6. Work out the reduced levels and complete the field book for the level readings given below (a) by the height of instrument or collima-

tion method, (b) by the rise and fall method. State also the relative merits of each.

Back sight.	Inter sight.	Foresight.	Reduced level.
5.23	-		500.00
	4.76		
	6.44		
4.92	7.26	4.97	
	4.93		
4.63	4.52	5.64	
	3.04		
		2.35	

DRAWING

Examiners-- { PROF. C. V. MILLER, A.C.G.I., B.Sc., A.M.I. STRUCT.E.
MR. Q. A. RAHMAN, B.Sc., C.E. (EDIN.), M.B.E.
,, A. M. AHMED, B.Sc.

The figures in the margin indicate full marks.

All construction lines must be shown.

Marks will be awarded for accuracy and finish.

First Half

1. Fig. 1 shows the plan of the interpenetration of a right square prism and a right cone, both their bases resting on the horizontal plane. The height of the cone is $3\frac{1}{2}$ " the height of the prism $3\frac{1}{4}$ ". Draw—

(1) the front elevation, (2) a side elevation looking in the direction of the arrow.

Scale: Full size.

70

2. Make an isometric drawing of the block shown in Fig. 2 with the point P in front. Scale: $1\frac{1}{4}$ full size.

50

3. The roof plan of a house is given in Fig. 3. The roof planes A and B are inclined to the horizontal at 30° and 45° respectively. Find the length of the valley rafter CD and its true inclination to the ground. Scale: 5 feet=1".

30

Or,

A water tower is shaped like a right hexagonal pyramid set on a right hexagonal prism. The sides of the tower are 10 feet and the walls are 9 feet high above the floor, the height of the central apex is 15 feet above the floor. Find the true angle subtended between any two faces of the pyramidal roof of the tower. Scale 5 feet=1 inch.

Second Half

1. Copy the sectional elevation of the crosshead shown in Figure 1, showing the lower half in outside view. Scale: Full size. 55
2. Complete the sectional view of Figure 1, showing the lower half in outside view as seen in the direction of the arrow. Scale: Full size. 55
3. Differentiate between a key and a cotter; give the proportions of a key and a cotter, giving sketches. Show at least two methods of preventing a cotter from working loose. 40

Or,

4. Give a freehand sketch of a device for coupling two shafts which are parallel but slightly out of line. 40

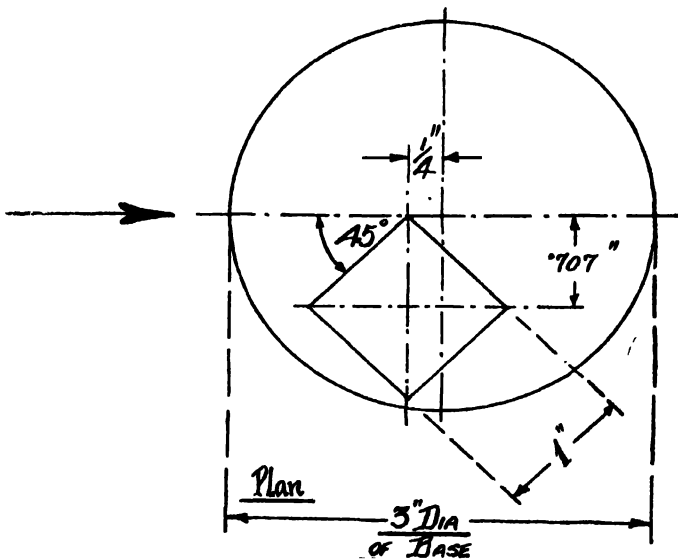


Fig. 1.

MATERIALS OF CONSTRUCTION

Examiners— { Mr. D. N. DUTT, B.Sc., B.E.
 { „ M. N. MUKHERJEE, B.E.

The questions are of equal value.

Only FIVE questions are to be attempted from EACH half.

First Half

1. What takes place in the process of rusting of iron? What methods are employed to prevent it?
2. What do you understand by the following terms: base, solvent, drier, and colouring pigment? Give some examples of each.
3. How would you prepare whitewash for the interior of rooms? Describe how whitewashing is done.
4. Describe how you would paint an old wood work.
How are the following paints prepared: (a) white, (b) green?
5. Describe how you would test cement for tensile strength. Illustrate your answer with neat sketches of the machine used for the purpose.
6. Write a specification for good brick earth. To what is the colour of bricks due? Give a recipe for colouring the unplastered outside surfaces of the walls of a brick building red.
7. What are the tensile and compressive strengths of cast iron, wrought iron, and steel?
Give the approximate weights of a cubic foot of cement and brick masonry.
Name some brands of quick-setting and slow-setting cements as sold in the market.

Second Half

1. What is artificial stone flooring? Give a detailed specification for 1" thick artificial stone flooring, both for red and grey.
2. The roof of a Calcutta building is leaking badly. Give in detail what methods you would recommend to make it watertight and to save deterioration of the roof steel work.
3. Give complete specification for Reinforced Concrete Perforated Jali work as grills.
4. A room (48'×10') is to be spanned by a 4" thick reinforced concrete slab.
Give —
 (1) the section and number of planks required for centering;
 (2) quantity of cement in tons;
 (3) quantity of sand in maunds;
 (4) quantity of stone chips and their size.
5. What timbers are generally used by Bengal engineers? Name them, mentioning works for which each is specially suitable and the points you would note in selecting good timber.
6. State the characteristics of good building stone. Name any two examples of sedimentary stone, and state their qualities and the kind of work each is best suited for.
7. Rivet holes are either punched or drilled.
Discuss the advantages and disadvantages of the two processes.
What is the pitch of a rivet? Give its minimum value.

B. E. Examination,
1934
(NON-PROFESSIONAL)
MATHEMATICS
(C.E. and M.E.)
THEORIES

Examiners— { Mr. J. M. BOSE, M.A., B.Sc. (Edin.)
 „ P. L. GANGULI, M.A.

The questions are of equal value.

Only FOUR questions are to be attempted from EACH half.

First Half

1. Prove that the series $\sum u_n$ is convergent or divergent according as its ratio of convergency is ultimately $<$ or $>$ 1.

Examine the convergency of the series.

$$(\Sigma - 1)^n n(m-1) \dots (m-n+1) x^n / n!$$

where x is positive and m has any real value.

2. Prove

$$\begin{vmatrix} a_1 & a_2 \\ b_1 & b_2 \end{vmatrix} \begin{vmatrix} a_1 & a_2 \\ \beta_1 & \beta_2 \end{vmatrix} = \begin{vmatrix} a_1 & a_2 & 0 & 0 \\ b_1 & b_2 & 0 & 0 \\ -1 & 0 & a_1 & a_2 \\ 0 & -1 & \beta_1 & \beta_2 \end{vmatrix}$$

What are adjoint or reciprocal determinants?

Δ is a determinant of order 3, D , the reciprocal determinant, prove $D \cdot \Delta = \Delta^3$.

3. Assuming De Moivre's Theorem, prove

$$\sin n\theta = n \cos^{n-1}\theta \sin \theta - \frac{n(n-1)(n-2)}{3!} \cos^{n-3}\theta \sin^3 \theta.$$

Hence deduce

$$\sin \alpha = \alpha - \frac{\alpha^3}{3!} + \frac{\alpha^5}{5!}.$$

Given

$$\frac{\sin \theta}{\theta} = \frac{2165}{2166}$$

show that θ is nearly the circular measure of 3° .

4. If

$$2 \cos \alpha = a + \frac{1}{a}, \quad 2 \cos \beta = b + \frac{1}{b}, \dots$$

prove that

$$2 \cos (p\alpha + q\beta + r\gamma + \dots) \\ = a^p b^q c^r \dots + \frac{1}{a^p b^q c^r \dots}$$

Obtain the six values of $(-1)^{\frac{1}{6}}$.

5. Prove

$$1 - 2x \cos \theta + x^2 = \operatorname{cosec} \theta (\sin \theta + x \sin 2\theta + x^2 \sin 3\theta + \dots)$$

Given $\tan x = n \tan y$,

show that

$$x = y - m \sin 2y + \frac{m^2}{2} \sin 4y - \dots$$

where

$$m = \frac{1-n}{1+n}.$$

Second Half

1. Apply the method of integration by parts to find the value of

$$\int (f(x) + f'(x))e^x dx.$$

Hence show that

$$\int \frac{x e^x}{(1+x)^2} dx = \frac{e^x}{1+x}.$$

2. Evaluate the following

$$\int_0^2 \sin^2 x \cos^4 x dx \quad \int_0^\infty e^{-x} x^n dx.$$

Prove that

$$\int_0^1 \left\{ \log \left(\frac{1}{x} \right) \right\}^n dx = n$$

3. To what profession did Fourier belong? Give a short sketch of his career. What is the geometrical interpretation of Fourier series?

Find a trigonometric series for x which is valid for all values of x between

$$-\frac{\pi}{2} \text{ and } \frac{\pi}{2}.$$

4. If r, θ be the polar co-ordinates of a point and $u = \frac{1}{r}$ find expressions

(1) for the angle between the tangent and radius vector, (2) perpendicular on the tangent from the pole in terms of u .

5. Solve the following differential equations :—

$$(1) \quad \frac{dy}{dx} + y \cos x = \frac{1}{2} \sin 2x.$$

$$(2) \quad x + y \frac{dy}{dx} = ny.$$

$$(3) \quad x^2 \frac{d^2y}{dx^2} + x \frac{dy}{dx} - y = 0.$$

$$(4) \quad \frac{d^2y}{dx^2} + \frac{dy}{dx} + y = \sin 2x.$$

MATHEMATICS

(APPLICATIONS)

Examiners— { Mr J. M. BOSE, M.A., B.Sc. (EDIN.).
 { Dr. JYOTIRMAY GHOSH, D.Sc.

The questions are of equal value.

Only FOUR questions are to be attempted from EACH half.

First Half

1. Give the main characteristics of a simple harmonic motion.

Shew that the resultant of two simple harmonic vibrations in the same direction and of equal periodic time, the amplitude of one being twice that of the other and its phase a quarter of a period in advance, is a simple harmonic vibration of amplitude $\sqrt{5}$ times that of the first and

whose phase is in advance of the first by $\frac{\tan^{-1}2}{2\pi}$ of a period.

2. A particle is projected in a resisting medium with velocity V , making an angle α with the horizon; find the equation of the path and the position of the highest point, if the resistance varies as the velocity.

3. A particle describes the curve $r = ae^{\theta \cot \alpha}$ under a force directed towards the origin. Shew that the force varies inversely as the cube of the particle from the origin.

Find the time of describing any arc of the curve.

4. A uniform chain of length $2l$ hangs from two points in the same horizontal line at a distance of $2a$ apart. Find the form of the chain and the depth of the lowest point. If $l-a$ is small find the tension at the lowest point.

5. A telegraph wire is constructed of No. 8 iron wire which weighs 7.3 lbs. per 100 ft.; the distance between the posts is 150 ft., and the wire sags 1 ft. in the middle. Shew that it is screwed up to a tension of about 205 lbs. wt.

6. Find the equation to the *catenary of uniform strength*.

Shew that in this case the mass per unit length of the chain at any point varies as the corresponding radius of curvature.

Second Half

1. Obtain expressions for the kinetic energy and angular momentum of a rigid body moving parallel to a fixed plane.

A circular disc is rotating with an angular velocity ω about a point A on its circumference. Another point B on the circumference becomes suddenly fixed and the point A becomes free at the same time. Find the angular velocity of the disc about B . What must be the position of B if the disc is reduced to rest?

2. A wheel of radius a and moment of inertia mk^2 is set in motion on a rough horizontal plane by a couple L . Write down its equations of motion, and find the least value of friction in order that the wheel may roll away.

If the wheel were originally rotating with an angular velocity ω , and then gently placed on a rough horizontal plane, find after what time it rolls away.

3. A solid of revolution rolls down a perfectly rough inclined plane. Find its kinetic energy at any time t , and show that it is equal to the work done by gravity up to that time.

How would you modify your equations if the plane be not perfectly rough?

4. A solid cylinder of radius a and length h is floating with its axis vertical. If h' be the length of the axis immersed prove that equilibrium will be stable if

$$\frac{a^2}{4h'} > \frac{h}{2} - \frac{h'}{2}.$$

5. Define Metacentre, and obtain an expression to determine its position. Show how to find it experimentally.

Prove that if the metacentre of a solid of revolution whose axis is vertical is a fixed point in the body, the immersed surface must be spherical.

6. A thin cylindrical vessel of sectional area A floats upright, being immersed to a depth h , and contains water to a depth k . Find the work required to pump out the water.

(Civil Engineering)

APPLIED PHYSICS

Examiners— { MR. A. C. CHAKRABARTI, M.Sc., M.A. (Cantab)
PROF. D. M. BOSE, M.A., PH.D.

The questions are of equal value.

Only THREE question are to be attempted from EACH half.

First Half

1. Explain a method of producing refrigeration by the absorption process. Discuss the efficiency of the method.

2. Describe how by the 'air-compression' method a room in India can be maintained at a comfortable level of temperature and humidity. Would this be as economical as a vapour compression method? Give reasons for your answer.

3. Describe and explain the use of any form of Radiation Pyrometer.

4. Explain the principle of the Rousseau diagram. Describe an apparatus with which you can measure the Mean Spherical Candle Power of a street lamp.

Second Half

5. How would you measure the viscosity of a liquid by measuring its rate of flow through a tube? Explain the theory. What corrections and precautions are necessary?

6. Explain how a triode valve is used to produce amplification by resistance-capacity coupling. Obtain the formula.

7. What is photo-electricity? What is the relation between wavelength and the energy of the emitted electrons? How can the relation be verified experimentally?

Explain how photo-electric cells are used in automatic relays.

8. Explain the colours visible in thin films by reflected light.

How can you accurately test the planeness of reflecting surfaces?

GEOLOGY AND MINERALOGY

Examiners— { RAI BAHADUR A. K. BANERJEE
MR. A. L. COULSON

The questions are of equal value.

Only FOUR questions are to be attempted from EACH half.

First Half

1. What are the differences between the shells of Brachiopods and Lamellibranchs? Give the position in biological classification and the general range in time of the following fossils: Foraminifera, Graptolites, and Trilobites.

2. What do you understand by plutonic, hypabyssal, and volcanic rocks? Explain the conditions under which each class consolidates and the texture that results from such conditions of consolidation. Describe one type of rock from each class, giving the mineral composition and texture.

3. Give the composition and discuss the characteristics of galena, sphalerite, graphite, talc, and fluorite. How would you distinguish between (a) calcite and feldspar, and (b) hematite and siderite?

4. Describe the different modes of origin of ore deposits. State how native gold and diamond are known to occur.

5. Describe the rocks belonging to the Archæan group of India. Mention the chief economic mineral products that are obtained from the rocks of the group and the areas where they are worked.

Second Half

1. A plane of marine denudation is uplifted to a simple anticline on a continental scale. Describe the ensuing river system that is developed.

2. How are earthquakes caused? Describe the nature and propagation of the various kinds of waves caused by earthquakes. How is the epicentre of an earthquake determined?

3. Describe and compare the symmetry of the cubic and orthorhombic crystallographical systems. Give the Miller indices of the common forms of both systems.

4. What rocks constitute good road metals, building stones, and material suitable for ballast? Specify the necessary qualities and characters these rocks must possess. Describe any tests commonly used.

5. Describe the various methods of mountain formation, illustrating your answer with sketches.

ENGINEERING METALLURGY AND TECHNICAL CHEMISTRY

Examiners-- { Mr. N. N. SEN, M.Sc., A.I.C., A.R.S.M.
Prof. H. K. SEN, D.Sc.

(C. E. and E.)

THEORETICAL

The questions are of equal value.

Only THREE questions are to be answered from EACH half.

First Half

1. State the limits of tolerance for silicon, manganese, sulphur, and phosphorus in foundry iron and structural steel. Give reasons.

2. What defects would you expect to find in iron and steel castings, and what steps would you take to reduce them to a minimum?

In what respects are forgings superior to castings, and why?

3. Discuss the circumstances in which it is advantageous to use alloy steels in preference to plain carbon steels. Give the approximate composition, properties, and uses of nickel steel, nickel-chromium steel, manganese steel, and high-speed steel.

4. Draw the constitutional diagram of any binary eutectiferous system, and explain the use of such a diagram.

5. Write notes on Austenite, Martensite, Troostite, Sorbite, Pearlite, Ferrite, and Cementite. State the composition and heat-treatment of the steels in which they usually occur.

Second Half

6. Give an account of the general methods of obtaining metals from their ores.

Explain clearly what is meant by—

(i) Mineral; (ii) Ore; (iii) Gangue; (iv) Flux, and (v) Slag.

7. Describe, with the help of a neat pencil sketch, the working of an iron blast furnace, indicating specially the (i) chemical reactions involved, (ii) the proportions of the various raw materials charged and of the products and by-products obtained.

8. What are the chief ores from which nickel is extracted? How is nickel obtained in a pure state? Give an account of the more important alloys of nickel used in engineering.

9. Write an essay on the manufacture of Portland cement, specially touching the following points:—

- (a) Correct proportioning and mixing of the raw materials.
- (b) Advantages or otherwise of intermittent and continuous processes.
- (c) Aluminous cement and its special characteristics.
- (d) Principle of setting and hardening of Portland cement.
- (e) Prospect and present position of the cement industry in India.

10. (a) Explain clearly the principles involved in the producer gas and water gas operations. What is semi-water gas?

(b) Write notes on: (i) the 'blow period'; (ii) the 'make period'; (iii) carburetting; (iv) influence of temperature on the equilibrium of the water gas reaction.

Or,

(c) The flue gases leave a boiler plant at 273°C . The coal used contains 72.0% carbon, 4% hydrogen, 8.5% oxygen, 13% ash, and 7.0% moisture. Assuming that 150% excess air is used for the combustion of the coal, calculate the loss of heat in the flue gases when one ton of coal is burnt. Given—

Air contains 23% oxygen and 77% nitrogen by weight;
The specific heat of steam is 0.45 and that of other gases 0.25;
The temperature of the boiler house is 30°C .

(C. E. only.)

PRACTICAL

N.B.—The number on the bottle should be carefully entered in the answer-book.

1. (a) Estimate the total quantity of copper gravimetrically in the given solution.

(b) Estimate volumetrically the total quantity of calcium in the given solution.

2. Submit your practical note-books.

(Mechanical Engineering.)**APPLIED PHYSICS (METROLOGY).**

Examiners— { PROF. J. RIFFKIN, B.Sc. (Glas.), Dip. R.T.C., A.M.I.,
Mech. E., F.E.R. Econ.S.
MR. C. R. BUDD.

The questions are of equal value.

Not more than THREE questions to be attempted from EACH half.

First Half

1. With the aid of neat diagrams describe the Gaugematic Grinding Machine. State clearly the advantages and limitations of the machine.

2. The machine shop of a large engineering works has a good selection of general purpose machines. Fifty steel crank shafts for looms are required to be machined from forgings about 5 ft. long. Each shaft has two cranks, the crank pins and end bearings are 2 ins. diameter and the 'throw' is $2\frac{1}{2}$ ins.

Show in tabular form the order of machining operations, together with the type of equipment used for each operation.

Make sketches of the accessories and gauges required.

3. Sketch and give figures of all angles for a suitable tool for rough turning (i) Mild-steel, (ii) Cast-iron, (iii) Brass.

Describe, with sketches, the special features of the 'Craven' special circular cutter.

4. Make a neat sketch of the mechanism of the Zeiss Optotest machine. State the functions of the various parts, referring to your sketch by index letters.

What are the advantages and limitations of this machine?

5. With the aid of a neat sketch select a representative example and illustrate the use of—

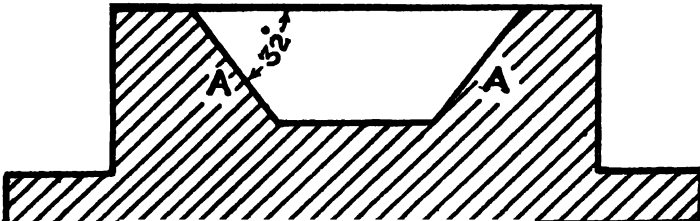
- (i) the 'Mercer' cylinder gauge;
- (ii) the 'Sine bar'.

Second Half

1. What are the five elements which must be controlled to ensure interchangeable threaded work? Of these five which are essentially important, and why?

Describe, with sketches, the anvils of the Wickman adjustable caliper thread gauge, and explain exactly how they test these essential points.

2. It is required to machine turn the face marked 'A' in the sketch



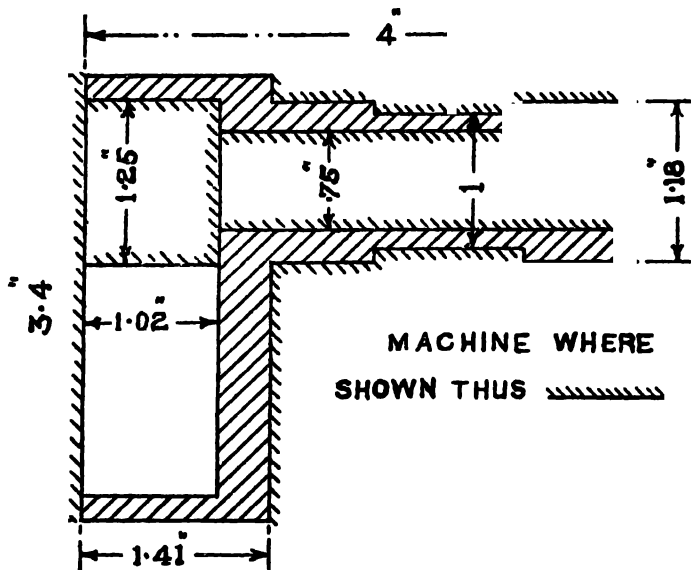
by means of a vertical boring machine. It is impossible to swivel the ram to the angle of 82° shown, but it may be set at a lesser angle. The hori-

zontal feed to the tool ram is $\frac{3}{16}$ " and the vertical feed $\frac{1}{4}$ " per turn of the feed screws. Using these feeds in combination, calculate at what angle the ram must be set from the vertical position in order to machine the face 'A'.

3. Define the term 'allowance' as applied to mechanical fitting. Discuss the relative merits of 'forced fits' and 'shrinkage fits'. What are the usual allowance made for such fits? Calculate the pressure necessary to force a steel spindle $4\frac{1}{4}$ " diameter into the boss of a cast iron wheel, the boss being $6\frac{1}{4}$ " long. Assume a pressure factor of 100 and that the allowance is 0.008".

4. The sketch shows a cast iron pump body, 1,000 of which have to be machined as indicated. Each body can be machined to fine limits in 8 minutes.

Briefly describe the type of machine you would use. Sketch diagrammatically a layout of tools for a sequence of operations to get this production. What materials would you select for the cutting tools for the turning operations?



5. Dial gauges are to-day widely used in engineering workshops. Give at least four examples of its practical application to internal and external gauging, stating exactly how you would apply the gauge.

APPLIED PHYSICS (METROLOGY) PRACTICAL.

Examiners— { Mr. J. RIFFKIN, B.Sc. (Glass), Dip. R.T.C., A.M.I.,
Mech. E., F.E.R.ECON. S.
Mr. C. R. BUDD

The examiners will detail the particular test or tests you are required to attempt.

Submit your results according to the following scheme ; give neat sketches where necessary :—

- (a) Object of the test,
- (b) Apparatus used,
- (c) Procedure adopted,
- (d) Calculations,
- (e) Observations and deductions.

1. 'Go' Ring and 'Not Go' Calliper Gauges :—

Spindles are required to conform to a class X running fit.

Nominal diameter on a hole basis = $2 \cdot \frac{1}{8}$ ins.

High limit of spindle diameter = $-0 \cdot 0020$ in.

Low limit of spindle diameter = $0 \cdot 00425$ in.

Tolerance = $0 \cdot 00225$ in.

Measure the given Ring and Calliper gauges, and record your results.

Are the gauges satisfactory for inspecting the spindles? Is there any allowance for wear? If so, how much?

2. A Lathe Test :—

The test bar which you will find in the chuck of the lathe has been turned by the lathe itself, and it is nominally the same diameter as the holes in the turret of the lathe. Do not remove the bar from the chuck but use it to test the alignment and accuracy of the turret holes and faces in relation to the bed and spindle of the lathe. Write down your conclusions and any measurements of errors very clearly.

3. Position Pins with Hexagon Heads :—

Nominal diameter of pins = $0 \cdot 3625$ in.

High limit = $+0 \cdot 00060$ in.

Low limit = $-0 \cdot 00060$ in.

Tolerance = $0 \cdot 0012$ in.

With the aid of the Zeiss Optotest machine, inspect the given eight pins, and state definitely how many you would pass.

4. Taper Plugs :—

You are given three ground taper plugs which are supposed to be tapered to $\frac{3}{32}$ in. per foot. You are also given two ring gauges one of which is smaller in the bore than the other.

Calculate the distance these rings should be apart when placed on a taper plug which is accurate. Use the rings to measure and compare the tapers of the three plugs.

5. Fluted Taps :—

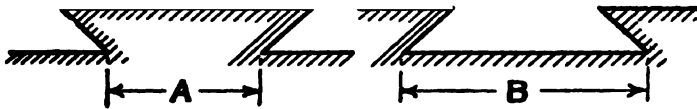
The four fluted hand tap and the three fluted machine tap provided are of the same nominal diameter, pitch, etc. Measure and compare these taps, and give reasons for any differences you find.

6. Plate Gauge :—

Measure all angles with the aid of the 'Sine-bar'.

7. Male and Female Dovetail:—

You are given an example of a portion of a male and female dovetail machine slide. It is necessary to gauge the dovetails in various positions along the length for accuracy in machining.



You are given dimensions *A* and *B*. Using the cylinders provided, set the outside Vernier calliper to gauge the male dovetail and the inside calliper to gauge the female dovetail to calculated dimensions and then test the dovetails.

8. Taper Hole in Block:—

Measure at four different diameters. Illustrate graphically any variation of the generator from the straight line tangential to the two extreme measured diameters in an axial plane.

PROFESSIONAL

(Civil Engineering.)

ROADS AND RAILWAYS.

Examiners— { MR. D. M. DUTT, B.Sc. B.E.
MR. D. C. TONKIN

The questions are of equal value.

Four questions only to be attempted from EACH half.

First Half

1. What do you understand by the following terms?—

- (a) Ruling gradient.
- (b) Camber.
- (c) Tar macadam.
- (d) Waterbound macadam.
- (e) Tarmac.
- (f) Tar.
- (g) Pitch.
- (h) Asphalt.
- (i) Bitumen.
- (j) Asphaltic cement.

2. Discuss the effect on wheeled traffic of a small irregularity on the surface of a road.

Write short notes on the following in regard to wheeled vehicular traffic on roads:—

- (a) Width of tyre.
- (b) Diameter of wheel.

3. What methods are employed for preventing the dust nuisance on roads?

Describe the method which has been found the most effective.

4. What requirements would you expect of a perfect street pavement? Sketch the cross section of—

- (a) a granite sett pavement ;
- (b) a hill road partly in bank and partly in cutting.

5. Describe, with sketches, how you would construct a road over a swamp or marshy ground.

Second Half

1. Compute the radius and lead for a 1 in 12 turn out from a straight main line. Given—

Length of tongue—18' ;

Gauge—5' 6" ;

Clearance or heel divergence—4½" ;

Theoretical nose if crossing to end of crossing curve—2' 0".

Assume the curve to spring from the heel of the tongue.

2. What is ballast?

What are its functions?

What are the essential features of good ballast?

What materials are used as ballast?

3. Deduce an expression for the super elevation in inches of the outer rail on a curve.

Assume—

Gauge = G ft.

Radius of Curve = R ft.

Speed of train in miles per hour = V .

Explain each step you take.

4. Define the following :—

- (a) Curve lead.
- (b) Switch lead.
- (c) Lead of crossing.
- (d) Number of crossing.
- (e) Spline rail.

Write short notes on the following :—

- (a) Creep.
- (b) Roaring rails.
- (c) Coning of wheels.
- (d) Compensation of grade for curvature.
- (e) Vacuum brake.

5. A line is running on bearing $45^{\circ} 10'$ and crosses a river. The chainage of the edge of the river is 1,237 and it is desired to have at least 300' of straight before entering a curve. At chain 2,000 along the straight the bearing changes to $79^{\circ} 30'$.

A plain circular curve is to be used and no transition curve put in.

Give the radius in degrees of the curve you would employ, and make out a table showing the angle you would set out for each station point on the curve.

Would you set out any special point as a check on your field work?

6. The alignment of a railway crosses a large river.

Describe fully how you would find the flood discharge at the crossing and the field work that is necessary for the purpose.

IRRIGATION AND SANITARY ENGINEERING

First Half

Examiners— { RAI SAHEB K. C. BANERJEE, B.E.
MR. D. N. SENGUPTA, B.E.

The figures in the margin indicate full marks.

Only FIVE questions are to be attempted from this half.

1. In the location on an impounding reservoir what geological, topographical, and climatic conditions, and what conditions of stream flow are desirable? Give your reasons in each case. 80

2. In what respects does a mechanical filter differ from a slow sand filter? 30

3. Three pipes *ABC*, *ADC*, and *AEC* are joined at *A* and *C*. *ABC* is 10 inches in dia. and 2,000 ft. long, *ADC* is 6 inches dia. and 800 ft. long, and *AEC* is 8 inches dia. and 1,500 ft. long. The combined flow of the three pipes is 24,000 galls. an hour. What is the pressure at *A* if the flow is from *A* to *C* and the residual head at *C* is equivalent to 15 ft. head of water? 40

Or,

4. A small town purchased a centrifugal pump to be driven by an internal combustion engine. When tenders were opened the following proposals were found:—

Name of bidder	Cost of engine and pump.	Guaranteed efficiency.	Fuel consumption at full load per H.P.h.
<i>A</i> ...	Rs. 12,000	70 per cent.	galls. 0·12
<i>B</i> ...	„ 9,500	65 „	0·10

Assuming (1) the pump to deliver 900 galls. a minute against a total head 100 ft. for 8 hours, (2) the cost of fuel to be one anna per gall., and (3) the interest plus depreciation to be 15 per cent., find which is the best investment.

5. What considerations are necessary in laying out a system of sewers? 40

6. Describe the principles of operation of the activated sludge process of treating sewage. 40

7. For 15,600 ft. of tributary sewer on a separate system the following particulars are available: density of population, 25 persons per 100 ft. of sewer; average daily water supply at 30 galls. per head; ground water, 15,000 galls. per mile per day; trade wastes, 200,000 galls. per day; and grade of sewer, 1 in 500. Find the size of the sewer, using Bazin's formula and assuming $c=57\cdot783$.

Or,

8. If an aeration of 6 hours is to be provided, what must be the capacity of an aeration tank treating 1,000,000 galls. of sewage with 20 per cent. of sludge return on a 98 per cent. of sludge basis? 20

Second Half

The questions are of equal value.

Only FOUR questions are to be answered from this half.

1. What is an undersluice? What purpose does it serve? Draw a sketch to give an idea of the relative position of an undersluice, a divide wall, and a head regulator.

2. In a channel with flowing water what are the factors which control silting and scouring of its bed? State what you understand by Kennedy's theory of critical velocities as expressed in the empirical equation $V_o = cd^m$.

3. Design a channel to carry 200 cusecs of water with a surface slope of 1 in 5,000. The following data may be assumed in the calculations:—

Hydraulic mean depth.	Value of c in the formula $V = c \sqrt{RS}$	Remark
2 feet.	78	Assume value of ' c ' to be proportional for intermediate hydraulic mean depths.
3 "	80	
4 "	85	
6 "	91	
8 "	96	

The constants ' c ' and ' m ' in Kennedy's equation : ' $V = cd^m$ ' are 0.84 and 0.64 respectively.

4. Explain what you understand by the term 'Hydraulic gradient'.

Draw a sketch to give an idea of a weir with its crest 8 feet above the lowest water level of the river. Foundation rests on sand with a hydraulic gradient of 1 in 12.

5. What are the functions of a spill branch channel of a deltaic river? What are the evil effects of blocking such a channel?

6. On the river Hooghly close to Calcutta where land is costly the bank is being washed away by waves. Draw a sketch to illustrate the work that you propose to construct to protect the bank.

MECHANICAL ENGINEERING.

Examiners— { Mr. J. RIFFKIN, B.Sc. (GLASS.), DIP. R.T.C., A.M.I.,
MECH. E., F.E.R.ECON.S.
.. K. CHATTERTON, B.Sc.

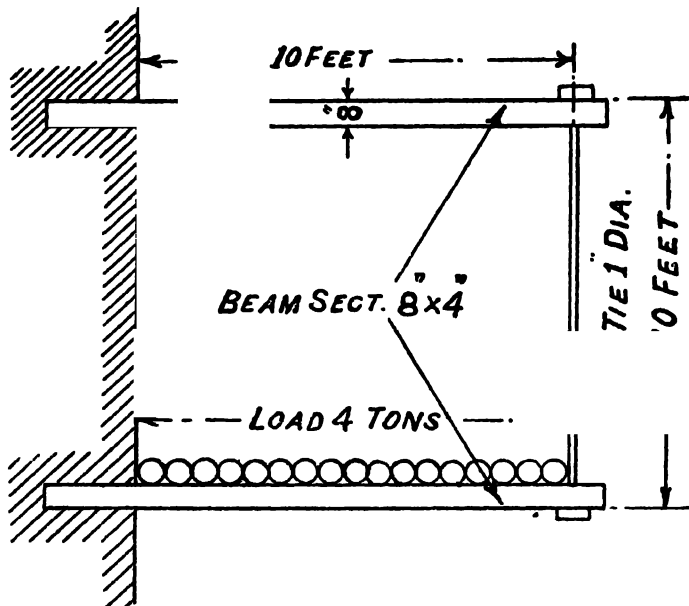
The questions are of equal value.

Not more than THREE questions to be attempted from EACH half.

First Half

1. Two timber beams, each 8" deep \times 4" broad in section and 10 ft. long, are erected as parallel cantilevers, and tied together at the free ends

by a steel rod 1" diameter (see Fig.). The lower beam carries a distributed load of 4 tons over its whole length.



Find the tension in the tie and the maximum stress in the beams. Assume that there is no initial stress in the tie rod. E for timber = 780 tons/in.²; E for steel, 12,500 tons/in.².

2. Obtain an expression for the stress at any point in the cross-section of a short column, or basal plane of a wall, when the point of application of the resultant load is on *neither principal axis* of the section. In the case of a rectangular section show that if the load point on one diagonal the neutral axis is parallel to the other diagonal.

The section of a brick pier is a rectangle and hollow, the dimensions of the external and internal rectangles being 54" × 45" and 36" × 27" respectively. Find the maximum distance from the centre of the point through which the line of action of the resultant thrust may pass in order that there may be no tension in the section.

3. Deduce the Lamé equations:—

$$(p - a)r^2 = b = (f + a)r^2$$

Find the thickness of metal necessary in a hydraulic cylinder 12 inches internal diameter to withstand a pressure of 12,000 lb./in.² if the greatest tension in the material is not to exceed 4,000 lb./in.².

4. A 10" × 8" joist (web 0.4" ; flanges 0.8" thick) has a span of 10 ft. and is simply supported at the ends. Find the total deflection due to bending and shear at a point 4 ft. from one end due to a load of 7 tons placed there. Assume that for shear the section may be taken as a rectangle 10" × 0.4" with the shear stress uniformly distributed. $E = 18,000$ tons/in.² ; $G = 5,000$ tons/in.².

5. Find the maximum principal tensile and compressive strains in a shaft 8 inches in diameter which is subjected to a bending moment of 160,000 lb.-ins., a twisting moment of 240,000 lb.-ins., and a direct thrust of 100,000 lbs. $E=30 \times 10^6$ lb./in.², $\sigma=0.25$.

Second Half

1. A cam is required to give a vertical motion of 6" to a slider, the centre line of which passes through the axis of the cam shaft. The slider is to rise with uniform velocity and then descend uniformly, but at half the speed of the ascent, the ascent and descent occurring during one revolution of the cam. The diameter of the cam shaft is $2\frac{1}{4}$ " and the least distance from the cam shaft centre to the bottom of the slider is $4\frac{1}{2}$ ". Set out the profile of the cam.

2. Prove that two equal elliptic wheels will roll together without slipping. Show how this may be utilized to obtain a quick return motion.

3. The balls of a Porter governor weigh 4 lbs. each, the load on the governor being 40 lbs. and the arms intersect on the axis. At what height will this governor run if it revolves at 240 R.P.M.? If the speed of the governor is suddenly increased by 2.5%, what pull will be exerted on the gearing attached to the governor sleeve? If the friction of the regulating apparatus is equal to a dead load on the sleeve of 5 lbs., by how much must the speed increase before the balls begin to rise?

4. In an inverted direct acting engine the stroke is 2 ft., length of connecting rod 4 ft., cylinder diameter 14 ins., weight of reciprocating parts 300 lbs., and the speed of revolution 180 R.P.M. On the down stroke at the commencement of the stroke the difference of pressure on the two sides of the piston was 40 lbs./sq. in. (acting downwards): at the end of the stroke the difference of pressure was 10 lbs./sq. in. (acting upwards). Find the effective pressure transmitted to the crank pin in these positions. If the steam pressures remain unaltered, at what speed would the engine have to run in order to make the effective pressure at the end of the stroke zero, and what would then be the effective pressure at the commencement of the stroke?

5. A driving and a driven shaft are 10 ft. apart centre to centre. The driving pulley is 3 ft. diameter and the driven pulley 2 ft. Find the length (a) of a crossed belt connecting the two pulleys, and (b) of an open belt.

ELECTRICAL ENGINEERING.

The questions are of equal value.

Examiners— $\left\{ \begin{array}{l} \text{PROF. M. R. SENGUPTA} \\ \text{MR. A. C. BANERJEE} \end{array} \right.$

First Half

Only THREE questions are to be attempted from this half.

1. Find the characteristics of the load at the sending end and the transmission efficiency of a single phase transmission line 100 miles long when the receiving end delivers 20,000 K.V.A. at 100 K.V., 50 cycles,

and power factor 0.9 lagging. The resistance of conductor is 0.4 ohm per mile and inductance is 2.22 millihenries per mile. Neglect leakage and susceptance.

2. Describe briefly different types of transformers in use. What do you mean by equivalent resistance and reactance of a transformer? Find the equivalent resistance and reactance referred to the primary side of a step-down transformer from the following data:—

Primary resistance=2 ohms.

Primary reactance=10 ohms.

Secondary resistance=0.02 ohm.

Secondary reactance=0.1 ohm.

Ratio 440/440 volts.

Prove any formulæ used.

3. The power input to a 500 volt, 50 cycle, 6-pole, 3-phase induction motor running at 975 r.p.m. is 40 kw. The stator losses are 1 kw. and the friction and windage losses total 2 kw. Calculate (a) the slip, (b) the brake horse-power, (c) the rotor copper loss, (d) the efficiency.

4. A 4-pole series motor gave the following data from a separately excited open circuit test at 700 r.p.m.:—

Field and armature current	...	5	10	15	25	40
Voltage across armature brushes	...	73	134	171	209	238

The armature resistance is 0.3 ohm and field resistance is 0.2 ohm.

The total number of two-circuit wave connected armature conductors is 654. Plot the speed/torque (revs. per minute/torque in ft. lbs.) curve for a terminal p.d. of 250 volts.

Second Half

Only FOUR questions are to be attempted from this half.

1. Write a general note on 'Shunt Generators in Parallel', dealing, in particular, with (a) the procedure for bringing up the second generator to share the load, (b) the safe method of shutting down one of the working machines, and (c) the automatic division of load between the machines. A skeleton diagram for two such generators, showing all the main parts and connections and measuring and other apparatus, should be given, also a combined diagram shewing the voltage characteristics of the two machines.

2. A 150-kw. shunt-wound generator, running at 200 r.p.m., has an armature resistance of 0.05 ohm, a field resistance of 200 ohms, and a terminal p.d., on full load, of 500 volts. Calculate the speed at which the machine will run as a motor when supplied with 120 kw. at 500 volts, assuming the flux per pole to be the same as before, and neglecting the effects of armature reaction.

3. (a) What purpose is served by a Relay in a long Telegraph circuit? Briefly describe, with a diagram, the construction and action of a Polarised Relay.

(b) What are the advantages of a Central Battery Exchange Telephone System as compared with a Magneto Exchange System? What part is played by the Induction Coil in a subscriber's apparatus belonging to a Magneto Exchange System?

4. (a) What is a purely inductive A.C. circuit, and how would you obtain the nearest approach to it? Prove that the current in such a circuit lags 90° behind the voltage applied.

(b) In a given 60-cycle, 230-volt circuit, consisting of a coil wound on an iron core, the current is found to be 15 amp. and the power input 1.085 watts. Calculate the power factor, the effective resistance, the inductive reactance and the inductance of the circuit.

5. A 5-B.H.P., 100-volt, 50-cycle, three-phase induction motor has a full load efficiency of 80 per cent. Assuming the power factor on full

load to be 0.8, determine the phase current and line current under these conditions if the machine be (a) star-connected, (b) mesh-connected. Relevant diagrams should be given.

6. (a) What purpose is served by specifying the rated output of Alternators in terms of kilovolt-amperes (K.V.A.) instead of or in addition

to the usual kilowatt rating? What is the significance of the ratio $\frac{\text{kw.}}{\text{K.V.A.}}$

and how is it generally expressed?

(b) In a three-phase Alternator with output of 750 K.V.A. at 2,300 volts, the stray power loss is found to be 18 kw. If the excitation loss is 12 kw. for 100 per cent. power factor and 15 kw. for 80 per cent. power factor load, and the resistance per pair of terminals on the Alternator is 0.2 ohm, what will be the efficiency with 100 and 80 per cent. power factor loads respectively, assuming the same K.V.A. output in either case?

HYDRAULICS.

Examiners— { PROF. C. V. MILLER, A.C.G.I., B.Sc.
MR. J. D. WATSON

The questions are of equal value.

Four questions only are to be attempted from EACH half.

First Half

1. A reservoir has sides sloping 1 foot vertically to 2 feet horizontally and the water is 25 feet deep. Any horizontal section of the reservoir is rectangular, the bottom being 10 feet wide and 20 feet long. Determine the time of emptying the reservoir through a short pipe 12 inches in diameter, assuming the coefficient of discharge is 0.7.

2. A locomotive travelling at 50 miles per hour scoops up water from a trough. The tank is 10 feet above the mouth of the scoup and the delivery pipe has an area of 50 square inches. If half the available head is wasted at entrance at all speeds and the scoup always flows full bore, find the velocity of the water as it enters the tank and the number of tons of water lifted from 600 yards of trough. What is the increased resistance to the train, and what is the minimum speed of train at which water can enter the tank?

3. Water is supplied to an axial flow impulse turbine having a mean diameter of 5 feet and making 150 revolutions per minute under a head of 120 feet. The angle of the guide blades at entrance is 33° and the angle the vane makes with the direction of motion at exit is 35° . 12 per cent. of the total head is lost in friction and shock in the wheel and 7 per cent. of the total head is lost in the supply pipe and guide passages. Determine the relative velocity of water and wheel at entrance and the velocity with which the water leaves the wheel. Find the hydraulic efficiency of the turbine.

4. What is meant by the term 'specific speed' applied to a centrifugal pump. Establish a formula for the specific speed of a centrifugal pump. Explain how the specific speed is used in determining the type of pump to be adopted.

What is the 'principle of similarity' applied to centrifugal pumps? Evolve formulae relating thereto, and state their use.

5. The piston of a single acting reciprocating pump moves with simple harmonic motion and is driven at 60 strokes per minute. The stroke is 14 inches. The suction pipe is 26 feet long and the suction valve is 21 feet above the surface of the water in the sump. Find the ratio between the diameters of the suction pipe and the pump cylinder so that separation may just not take place at the dead point. Assume that separation takes place at an absolute head of 4 feet and that the water barometer reads 34 feet.

6. A centrifugal pump 5 feet diameter running at 200 revolutions per minute pumps 5,000 tons of water from a dock in 50 minutes, the mean lift being 40 feet. The area through the wheel periphery is 1,000 square inches and the angle of the vanes at outlet is 32° . Determine the hydraulic efficiency, and estimate the average horse-power. Find also the lowest speed to start pumping against the head of 40 feet, the inner radius being half the outer.

Second Half

1. A dock gate is 80 feet wide and has sea water to a depth of 30 feet on one side and 9 feet on the other side. Find the total pressure and the centre of pressure for each side of the gate. Find also the resultant force on the gate and its direction.

2. Two reservoirs are connected by a 12 inch pipe, $1\frac{1}{4}$ miles long. For the first 500 yards the pipe has an inclination of 1 in 30, for the next half mile an inclination of 1 in 100, and for the remainder of its length it is level. The head of water over the inlet is 55 feet and over the outlet is 15 feet.

Determine the discharge in gallons per minute.

The coefficient of friction in the pipe may be taken as 0.0064.

3. A channel of trapezoidal section has a slope of 2.41 feet per mile. The bottom width is 20 feet and the sides make an angle of 60° with the horizontal. Calculate the necessary depth of water to give a velocity of flow of 3 feet per second. C in the Chezy formula may be taken as 100.

4. In an undershot wheel, 15 feet in diameter, the cross section of the stream striking the vanes is 4 feet by 12 inches, the velocity of the jet is that due to a head of 3 feet above the centre of the sluice, the coefficient of velocity being 0.80. If the velocity of the rim of the wheel is 0.4 that of the velocity of flow of the water through the sluice, determine—

(a) the theoretical efficiency of the wheel ;

(b) the horse-power developed by the wheel.

5. An inward flow turbine working on a fall of 16.5 feet has an inlet radius of 1 foot and an outlet radius of 6 inches. Water enters at 15° to the circumference with a velocity of 22 feet per second and is discharged radially. If the wheel makes 230 revolutions per minute, determine the inlet and outlet vane angles, and calculate the theoretical hydraulic efficiency.

6. Water is pumped from a well to a service tank through a pipe 2 miles in length. The height of the water in the tank is 200 feet above the level of the water in the well. From the tank a population of 1,500 is to be supplied with 80 galls. per head per day.

(a) Determine a suitable diameter for the delivery pipe so that the head lost in it may not be more than 25 per cent. of the effective head when the pumps are working 10 hours per day.

(b) Find the horse-power of the pumps, assuming an efficiency of 70 per cent.

The coefficient of friction in the pipe may be taken as 0.01.

PRINCIPLES OF ARCHITECTURAL DESIGN.

Examiners— { MR. PULINBIHARI GHOSH, B.Sc., B.L., A.M.I.E.
MR. S. C. CHATTERJEE

The figures in the margin indicate full marks.

First Half

1. Design a circular garden pavilion in Corinthian style according to the following specification :—

Plinth—20 feet in diameter and 1 foot high above ground level.

Height from plinth to top of roof—18 feet.

Roof to be flat terrace or reinforced concrete.

Draw a plan and an elevation of the structure to a scale of $\frac{1}{4}'' = 1$ foot.

Give the detail of the base mouldings of the column. 60

2. Write a comparative note on Egyptian, Indian, and Roman columns, illustrating your answer with sketches. 40

Or,

Write a short history of early Christian architecture, noting its special features and illustrating your answer with sketches. 40

Second Half

Answer Question 1 and ANY ONE of the other two.

1. Design a portico with R.C. pillars and railings for a residential building of moderate size, facing south. Only the front and side elevations and section of the portico need be shown. 60

2. Draw a Greek Doric column with entablature, showing all the mouldings in their relative proportions. The total height of the order to be 30' drawn to a scale of $2'' = 1'$. 40

3. Illustrate by sketches and notes the different methods of dome construction on a square base. 40

APPLIED MECHANICS.

Examiners— { PROF. C. V. MILLER, A.C.G.I., B.Sc.
MR. P. N. BANERJEE, M.A., M.I.E.

The questions are of equal value.

FOUR questions only are to be attempted from EACH half.

First Half

1. A steel joist 20 feet long is fixed equally firmly at both ends. The weight of the joist is 65 lbs. per foot run and its moment of inertia is

488 inch units. What central concentrated load, in addition to its own weight which may be considered as uniformly distributed, will this joist carry when its deflection at the centre is one four hundredth of the span? Take E as 12,000 tons per square inch.

2. An elliptical arch rib has a span of 60 feet and a rise of 12 feet ; it is hinged at the springings and the crown carries a load of $\frac{3}{4}$ of a ton per foot run over one half of the span. Determine the bending moment, normal thrust, and radial shear at $\frac{1}{4}$ span point in the loaded half of the span.

3. Using unequal angles, the suitable section for which may be chosen from those shown in Table 1 attached, design the end stiffeners for a plate girder of the following particulars. The depth of the web is 96 inches and its thickness is $\frac{7}{16}$ an inch. The flange angles are $8'' \times 8'' \times \frac{1}{4}''$; the filler plates are each $\frac{1}{4}$ an inch thick ; safe working stresses in shear and bearing are 5 tons and 12 tons per square inch respectively and the end shear is 112 tons. For each stiffener determine the number of one inch diameter rivets necessary for its suitable connection to the web. (Your design should follow practical design as closely as possible.)

4. A beam is supported on bearings, the length of each being one-eighth the length of the beam and the beam carries a uniformly distributed load over the middle quarter of its length. If the pressure on the bearings be assumed to vary from zero at the extremities of the beam to a maximum value at the inner edges of the bearings, draw the curves of load, shearing force, and bending moment for the beam, stating values in symbols. What is the greatest value for bending moment, the weight being W and the overall length l ?

5. A bridge of 180 feet span is supported by a pair of N girders each of which carries half the load. Each girder is 25 feet deep centre to centre of booms and has nine equal panels. The live load including impact is 5 tons per foot run and the dead load including weight of girder and track is 2 tons per foot run. Find the greatest force in the diagonal member of the 4th panel from the left abutment when the live load is in the position which produces the greatest shear in the panel considered.

6. Five axle loads of 5 tons, 9 tons, 12 tons, and 14 tons roll across a span of 50 feet from left to right with the 5-ton load leading. The distances from centre to centre of axles areas follows :—

From 5-ton load to 9-ton load=7 feet.

From 9-ton load to first 12-ton load=9 feet.

From first 12-ton load to second 12-ton load=10 feet.

From second 12-ton load to 14-ton load=12 feet.

Find the maximum bending moment produced by these loads at a point P 30 feet away from the left hand support. (An Influence line method may be used.)

Second Half

1. A beam of length $2l$ simply supported at ends carries a wedge-shaped load varying in intensity from 0 at one end to $\frac{W}{l}$ at the other end. Find the shearing stress and the bending moment at a point x from the end having no load.

For what value of x will the B.M. be a maximum?

2. A mild steel tie $10'' \times \frac{1}{4}''$ in section is subjected to a pull of 40 tons and is spliced in the middle. Design the splice,—safe allowable stresses being tensile 8 tons per sq. in., shear 5 tons per sq. in., and bearing $8\frac{1}{2}$ tons per sq. in.

3. A masonry wall 20" thick and 15' 0" high is subjected to a horizontal thrust of 500 lbs. per foot run at the top. A portion of the wall at the top is built in cement mortar and the rest in lime mortar. Taking the weight of the masonry in either case to be 120 lbs. per c.ft. and the coefficient of friction of lime mortar joint to be unity, find the greatest height up to which the wall can be built in lime mortar so as to be stable against horizontal sliding. Joints in cement mortar may be assumed to be safe.

4. A hollow cast iron column 8' 0" long has an external dr. of 10" and an internal dr. of 8". In addition to a direct compressive load of 20 tons it carries a load on a bracket fixed at its top, the centre line of this latter load being 8" from the axis of the column. Assuming that the tensile stress in the material is not to exceed $1\frac{1}{2}$ tons per sq. in., determine the maximum load that may be put on the bracket.

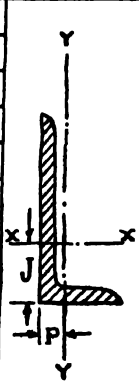
5. Neglecting rivet holes, find the section modulus of a compound girder consisting of two B.S.S. joists 15" x 5" and two plates 16" x $\frac{1}{2}$ " one at top and one at bottom. The flanges of the B.S.S. joists touch each other.

What uniformly distributed load will this girder carry on a span of 20' 0" with a factor of safety of 4?

6. A reinforced concrete beam continuous over supports is 10" wide and 16" deep. It has to withstand a shear of 12 tons at each end and 8 tons at the centre. The tension reinforcements consist of four 1" dr. rounds at both ends and centre and are sufficient to take the vertical shear stress. Assuming that $\frac{3}{8}$ " dr. rods are used and the safe allowable shear stress is 12,000 lbs. per sq. in., design the reinforcements necessary to take the horizontal shear stress.

TABLE I

SIZE and THICKNESS	AREA in Square Inches	Dimensions		Moments of Inertia		Least Radius of Gyration
		J	P	About XX	About YY	
5" x 3½" x $\frac{5}{16}$ "	2.561	1.56	.82	6.46	2.62	.76
" 3" x $\frac{3}{8}$ "	3.049	1.59	.85	7.63	3.09	.75
" 2½" x $\frac{1}{2}$ "	4.002	1.64	.90	9.84	3.95	.75
" 2" x $\frac{5}{8}$ "	4.924	1.69	.94	11.89	4.74	.74
5" x 4" x $\frac{5}{16}$ "	2.716	1.48	.99	6.74	3.84	.85
" 3½" x $\frac{3}{8}$ "	3.236	1.51	1.01	7.97	4.53	.85
" 3" x $\frac{1}{2}$ "	4.251	1.56	1.06	10.29	5.83	.84
" 2½" x $\frac{5}{8}$ "	5.236	1.61	1.11	12.44	7.02	.84
6" x 3" x $\frac{5}{16}$ "	2.716	2.09	.61	10.13	1.74	.64
" 3½" x $\frac{3}{8}$ "	3.236	2.12	.63	11.99	2.05	.64
" 3" x $\frac{1}{2}$ "	4.251	2.17	.68	15.51	2.62	.63
" 2½" x $\frac{5}{8}$ "	5.236	2.22	.73	18.80	3.14	.63



(Mechanical Engineering.)**HYDRAULICS AND HYDRAULIC MACHINERY.**

Examiners— { Mr. P. C. GANGULI, B.Sc. (Glas.).
 Mr. K. F. KINGS, M.A.
 Mr. A WEBSTER

The questions are of equal value.

Only THREE questions are to be attempted from EACH half.

First Half

1. A reservoir *A* supplies water to two other reservoirs *B* and *C*. The difference in level between the surface of *A* and *B* is 75 feet and between *A* and *C* 97.5 feet. A common 8-inch main supplies for the first 850 feet to a point *D*. A 6-inch main of length 1,400 feet is then carried on in the same straight line to *B*, and a 5-inch main of length 630 feet goes to *C*. Neglect all losses except that due to friction in the pipes, and find the quantity discharged per min. into the reservoirs *B* and *C*. =0.0

2. The supply of water for an inward flow reaction turbine is 500 cubic feet per minute and the available head is 40 feet. The vanes are radial at inlet and the discharge is radial. The outer diameter is twice the inner, the constant velocity of flow is 4 feet per sec. and the r.p.m. is 350. Find the velocity of the wheel, the guide and vane angles, the inner and outer diameters, and the width of the wheel at inlet and outlet. Take hydraulic efficiency as 0.8. Define specific speed. Find an expression for the specific speed of a turbine.

3. A reciprocating pump draws water from a sump through a suction pipe 6 inches diameter and 40 feet long, the water level being 10 feet below the level of the cylinder. The cylinder is 9 inches diameter, the stroke is 15 inches, and the length of the connecting rod 5 feet. The driving crank rotates at 20 revs. per min. Determine the pressure in the cylinder at the beginning of the stroke (a) when no air vessel is fitted ; (b) when an air vessel is fitted at the cylinder level at a distance 5 feet from it.

4. Define :—

Viscosity, Coefficient of viscosity, and Kinematic viscosity.

Fuel oil at a temperature of 10°C. is pumped through a pipe line 6 inches diameter and 5,000 feet long. Find the horse-power required to pump 10 tons per hour of oil if the weight of the oil per lb.=57 lbs. per cubic foot. The kinematic viscosity at 10°C. = 0.00015 sq. ft. per sec.

5. Explain :—

Dimensional homogeneity and Dynamical similarity and Corresponding speed.

Determine the torque necessary to rotate a thin disc 24 in. diameter at 3,000 revs. per min. in air, $\rho = 1.2 \times 10^{-3}$ and $\mu = 1.86 \times 10^{-4}$ C.G.S. units ; given that the torque necessary to rotate a similar disc 9 in. diameter in water at the corresponding speed is 0.79 ft. lb. For water $\rho = 1.00$ $\mu = 0.101$ C.G.S. units.

Find the condition that two speeds may be corresponding.

Second Half

1. A pump has to deliver through 3,000 feet of 3" dia. piping with a total lift of 20 feet. The pump output characteristic is as follows:—

G.P.M.	...	20	40	60	80	100
Feet Head	...	185	134	118	91	50

What quantity of water will be delivered through the pipe?

Assume $C=90$ in the Chezy formula.

2. A centrifugal pump is designed for a normal output of 18,000 gallons per hour. Assume the radial velocity of the water to be constant through the impeller (7 f.p.s.). The speed is 1,500 r.p.m. and the diameters at inlet and outlet are 6 inches and 12 respectively. Assume the gross head developed is 70 feet. Find (a) vane angles at inlet and outlet, (b) widths at inlet and outlet.

3. Establish the formula for flow through—

(a) a V-notch;

(b) a Venturi meter.

Describe the operation of a Pitot tube, and establish the relation between the readings obtained on a gauge attached to the Pitot tube and the flow of water past the end of the tube.

4. A hydraulic accumulator is to be used in conjunction with a pump for working a hoist. The load to be lifted is 2 tons at a speed of 3 feet per second and the hoist is due to operate every 2 minutes. The load is raised through a height of 20 feet. The pump pressure is 300 lbs./sq. inch and the efficiency of the hoist is 70%.

Find—

(a) the volume of hoist cylinder;

(b) minimum capacity of the accumulator;

(c) the pump water horse-power.

5. Power is to be transmitted through 1½ miles of 6" piping, the pressure at the pump end being 750 lbs./in.² Find the H. P. available at the delivery end and the efficiency of the system if the velocity in the pipe is 4 f.p.s. and $f=01$.

What would be the effect of using 2 pipes each of 6" dia. with other conditions as before?

MACHINE AND ENGINE DESIGN

Examiners— { Mr. A. M. AHMED
Mr. J. IRVINE

The figures in the margin indicate full marks.

First Half

1. The figure shows the steering gear for a motor omnibus without the box containing it. The maximum force coming on the ball

is 300lbs. in a direction at right angles to the axis of the steering lever. Find the cross section at the neck of the ball, and state clearly the stress you allow.

Design and make detailed drawings of the following :—

- (a) the steering nut;
- (b) the swivel;
- (c) the steering fork.

The bearing pressure is not to exceed 290lbs./sq. in. on any part
Calculate—

- (1) the thrust borne by the thrust bearings;
- (2) the twist borne by the steering spindle, the maximum coefficient of friction being 0.15.

State clearly the material, heat treatment, and tolerances used for different parts of the steering gear.

Second Half

Only two questions are to be attempted from this half.

1. Design a railway axle given the following :—

The wheels are 5 feet 6 inches apart. The centres of the axle boxes are 6 inches outside the wheel centres. Load on each box is 5 tons, and the deflection of the shaft midway between the wheels is .028 inch. Allowable pressure on the journals is 200 lbs./sq. ins. $E=13,000$ tons.

Sketch the axle, showing the positions of the wheel centres and the brasses. 50

2. A boiler is 10 feet 6 inches in diameter. The working pressure is 180 lbs./sq. ins. and the factor of safety is 4.5. Design a treble rivetted double butt strap longitudinal joint in which the plate and rivet strengths are equal. Shear strength 23 tons per sq. in. and tensile strength 28 tons per sq. in. Allow an outer pitch of 9 inches and take $1\frac{1}{4}$ times for double shear.

The number of rivets in a pitch is 5.
Calculate—

- (a) diameter of rivets;
- (b) percentage strength of joint;
- (c) thickness of plate.

Sketch the joint. 50

3. The weight of steam escaping through a hole of 1 square inch area in 70 seconds is equal to the gross pressure. Find the size of two spring loaded safety valves for a boiler of working pressure of 180 lbs. per sq. in., if the grate area is 52 sq. feet, consumption 28 lbs. per sq. foot of grate per hour, and $8\frac{1}{2}$ lbs. of water are evaporated per lb. of coal. The initial compression of the spring for 180 lbs./sq. ins. is $\frac{1}{3}$ of the diameter of the valve, and an accumulation of pressure of not more than 10 per cent. may be allowed. Sketch a suitable valve, and state the materials used in its construction. 50

4. An expression for the Mean Referred Pressure throughout the stroke of a steam engine is

$$\left[\frac{P}{R} (1 + \log_e R) - BP \right] 0.7$$

where P = absolute Boiler Pressure,

R = Total ratio of expansion,

BP = Back Pressure (when small it is permissible to place it within the brackets as shown).

Note.—It is sufficiently accurate to take $\log_e R$ as equal to $2.3 \log_{10} R$.

Find suitable diameters for a quadruple steam engine of 2,500 horsepower, with revolutions per minute 75, stroke 48 inches, boiler pressure 200 lbs., back pressure 3 lbs. absolute, ratio of H.P. to L.P. cylinder volume 1 to 9, cut off in H.P. engine 0.65 of the stroke, and diagram factor 0.7.

Sketch a suitable arrangement in plan of the cylinders, and indicate the path of the steam through the steam pipes, etc.

STRUCTURAL DESIGN

Examiners— { Mr. P. B. GHOSH, B.Sc., B.E., A.M.I.E.
,, J. N. DASGUPTA, B.E.

The questions are of equal value.

Candidates are permitted to use Dorman Long's section book.

Only FOUR questions are to be attempted from EACH half.

First Half

1. Design a suitable steel section for the purlin of a roof truss. Trusses are spaced 10 feet centres, purlins 5 feet centres. Wind load is 30 lbs./s.ft. normal to roof surface, and dead load is 10 lbs. per s.ft. of the inclined surface of the roof. Roof slope is 2 : 1.

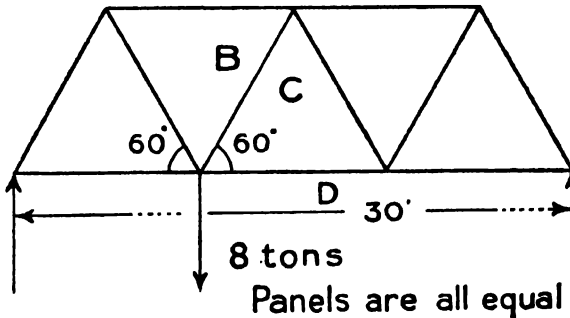
2. Design a reinforced concrete rectangular slab to cover an opening 8 ft. x 10 ft. The slab is to bear a superimposed load of $1\frac{1}{2}$ cwt. per s.ft. Give longitudinal and cross sections of the slab, showing the reinforcements clearly—

$$\begin{aligned} c &= 750 \text{ lbs./sq. inch;} \\ t &= 16,000 \text{ lbs./sq. inch;} \\ m &= 15. \end{aligned}$$

3. Find, by the method of sections, the stresses in the members AB , BC , and CD in the framed structure loaded and shown in figure overleaf.

Design the member BC and find, also, the number of rivets required for its connections to the joints at either end, using $\frac{7}{8}$ inch diameter rivet holes and $\frac{1}{4}$ inch gusset plates.

Select reasonable working stresses.



4. Design a steel grillage foundation for a stanchion carrying a load of 200 tons inclusive of its own weight. The base plate is 2 feet square and the bearing power of the soil 2 tons per square foot. Give sections of the foundation to show the arrangement clearly.

5. What is meant by the 'core' of the cross section of an elastic material? Obtain the core in the case of a solid circular section.

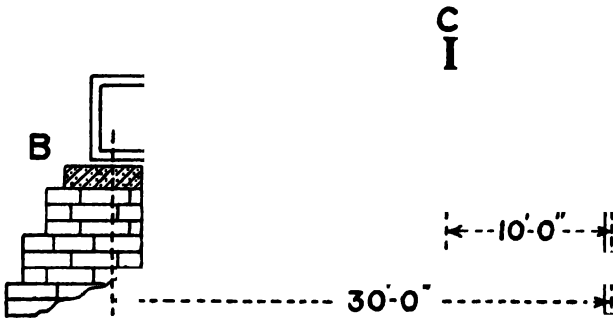
Find the limiting height to which a masonry column of circular section 5 feet external diameter, thickness of masonry 2 feet, can be built to withstand a wind pressure of 40 lbs. per square foot.

Weight of masonry = 140 lbs. per c.ft.

Second Half

1. Two plates forming a tie-bar have to be connected end to end by a butt joint having double cover plates. Each of the plates to be connected is to be 10 inches wide and $\frac{3}{4}$ inch thick; the rivets are $\frac{3}{4}$ inch in diameter. The stresses allowed are 6 tons per square inch in tension, 4 tons per square inch in shear, and 10 tons per square inch in bearing.

Find the number of rivets required and the safe load for the joint. Illustrate your answer with sketches.



2. Figure above shows a girder AB of 30 feet span, supporting one end of a simply-supported beam C at a point 10 feet from a cast iron

column, 10 feet long, both ends fixed at *A*. The load on the beam *C* is uniformly distributed and amounts, including its own weight, to 46 tons; the girder *AB* weighs 2.6 tons and carries a uniformly distributed total load of 6.8 tons.

The cast iron column is a hollow cylindrical one having an external diameter of 4 inches. Find the thickness of the metal to enable it to carry the load safely.

3. Design a reinforced concrete beam 20 feet effective span, supported at the ends to carry a distributed load of 500 lbs. per foot run including its own weight.

Allow $c=600$ lbs.; $t=16,000$ lbs.; and $m=15$.)

4. Design a suitable section for the tension flange at the middle of a mild-steel plate girder having the following dimensions:—

Effective span—50 feet.

Depth over flange angles—5 feet.

Dead load per ft. run—0.75 tons.

Equivalent distributed load per ft. run—2.25 tons.

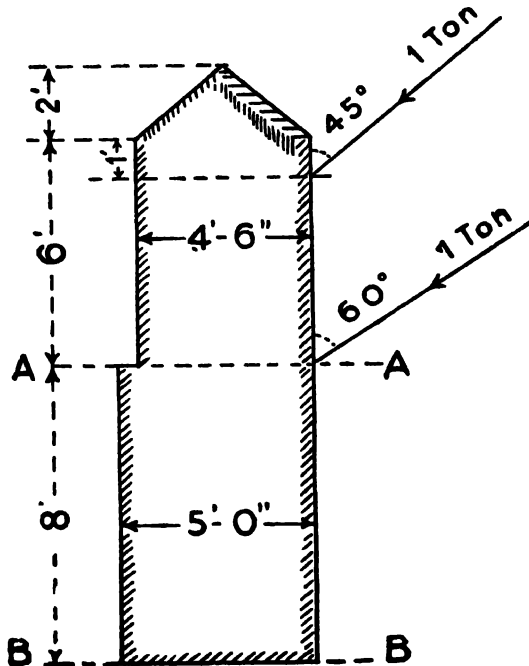
Thickness of web— $\frac{3}{8}$ inch.

Working stress not to exceed 7 tons per square inch.

5. A masonry buttress of the section shewn below is subjected to two thrusts per foot run in the positions indicated.

Examine the stability of the buttress at the levels *AA* and *BB*.

Weight of masonry— $1\frac{1}{2}$ cwt. per cubic foot.



THEORY OF MACHINES:

Examiners— $\left\{ \begin{array}{l} \text{Mr. P. C. GANGULI, B.Sc. (GLASS.)} \\ \text{,, J. A. STEVEN, B.Sc.} \end{array} \right.$

The questions are of equal value.

Only THREE questions are to be attempted from EACH half.

First Half

1. Find an analytical expression for the equivalent eccentric of a Stephenson's link motion, and deduce from it the construction by MacFarlane Gray for finding the equivalent eccentric for such a valve gear. Explain clearly the assumptions you make.

2. The centre of gravity of a motor car is at a height h above road level and is at a distance ' a ' behind the front axle and ' b ' in front of the back axle. Calculate the greatest retardation which can be produced by the brakes without skidding on a level road (a) if the front wheels are braked, (b) if the rear wheels are braked. Show that the rear wheel braking is more efficient if $a > b + \mu d$ where μ is the coefficient of friction between the tyres and road.

3. The turbine rotors in a steamship have a weight W tons, radius of gyration K feet, and rotate at n revolutions per minute. Show what effect turning the ship and the pitching of the ship will have upon the forces acting on the turbine bearings and in producing bending moment upon the shaft.

A turbine rotor rotating in a ship about an axis along the ship has a moment of inertia of 200 ft. tons units and it rotates at 300 revs. per min. The ship pitches 14° and has a period of oscillation of 14 secs. Find the gyrostatic couple-acting on the turbine.

4. A pair of wheels have 25 and 130 cycloidal teeth respectively. Find the addendum of each wheel that the arcs of approach and recess may each be equal to the pitch, the flanks being radial. Prove any formula or construction that you use.

5. Calculate the natural frequency of vibration of an elastic beam freely supported at both ends. Such a beam, 30 feet long, weighs with its loading 117.5 lbs. per ft. run. Its moment of inertia is 0.1306 ft. units and $E = 1.2 \times 10^6$ lb. per sq. inch. What is the natural frequency?

Second Half

1. What is meant by 'hunting' in a governor?

Describe, with a diagrammatic sketch, the Porter governor, explaining its advantages.

The balls of a Porter governor weigh 4 lbs. each, the load on the governor is 40 lbs., and the arms intersect on the axis. At what height will this governor run if it revolves at 240 R.P.M.? If the speed of the balls is suddenly increased 2.5%, what pull will be exerted on the gearing attached to the governor sleeve? If the friction of the regulating apparatus is equal to a dead load on the sleeve of 5 lbs., by how much must the speed increase before the balls begin to rise?

When—

R = length of crank,

L = length of connecting rod,

and $N = \frac{L}{R}$,

prove that the distances travelled by a piston from the beginning of a stroke when the crank has moved through an angle θ degrees equals

$$R(1 - \cos \theta) + L \left(1 - \frac{1}{N} \sqrt{N^2 - \sin^2 \theta} \right).$$

If the crank of an engine is 1'-3" long and the connecting rod is 6'-3", find how far the piston has moved from the beginning of the stroke when the crank has moved through an angle of 120°. Also find the acceleration of the piston at the beginning and end of the stroke, if the engine revolves 120 times per minute.

3. Explain, with reference to the balancing of a reciprocating engine, the terms (a) Primary balancing, (b) Secondary balancing.

The reciprocating parts of an inside cylinder uncoupled locomotive weigh 500 lbs. per cylinder. The revolving parts are equivalent to 650 lbs. per cylinder at crank radius. The stroke of the piston is 24 inches and the distance between the centre lines of the cylinder is 25 inches. Find the balance weights which must be placed in the driving wheels at 2'-6" radius, their planes of revolution being 5'-0" apart, in order to balance the whole of the revolving parts and $\frac{3}{4}$ of the reciprocating parts. Cranks at right angles, left hand crank leading.

4. Calculate the horse-power transmitted by a wire rope under the following conditions. The driving pulley is 12'-0" in diameter and it runs at 150 R.P.M. The rope consists of 6 strands, each strand having seven wires, each wire having a diameter of 0.064 inch. The rope embraces half the circumference of the pulley and the coefficient of friction between the rope and the pulley is 0.26. The weight of the rope is 0.56 lb. per foot of length. The working stress is 2,400 lbs. per sq. inch of wire section and the modulus of elasticity E is 29×10^6 lbs. per sq. inch. Prove any formula that you use.

5. Describe the crank and slotted lever mechanism used to obtain a quick return motion on a shaping and slotting machine. A mechanism of this description is required to give a quick return motion to the tool of a shaping machine. Assuming the crank radius is half the distance between the fixed centres, find the ratio of the time of the cutting stroke to that of the return stroke, when the crankshaft revolves uniformly. The obliquity of the connecting rod to the line of stroke may be neglected. Find graphically the velocity ratio at any instant between the crank pin and the tool. Prove the construction you use.

STRENGTH AND ELASTICITY OF MATERIALS

Examiners— { Mr. G. P. CHESNEY
Prof. J. RIFFKIN, B.Sc., (GLASS.) DIP. R.T.C.,
A.M.I. MECH.E., F.R.ECON.S.

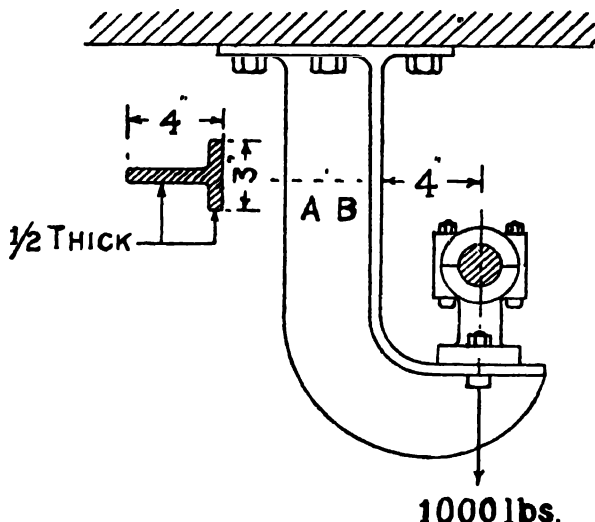
The questions are of equal value.

Not more than THREE questions to be attempted from EACH half.

First Half

1. Fig. illustrates a cast iron bracket carrying a bearing. The load on the bearing is 1,000 lbs. Calculate the maximum tensile stress across

the section AB and the distance of the neutral axis of the section from the centre of gravity of the section.



2. A steel tyre 1" thick is shrunk on to a cast iron rim 24" outside diameter and 3" thick. Find the inside diameter of the steel tyre to the nearest thousandth of an inch, if, after shrinking on, the tyre is to press on the rim with a stress of 4.5 tons/in.².

Take E for steel $= 30 \times 10^6$ lb./in.²; E for cast iron $= 14 \times 10^6$ lb./in.²; Poisson's ratio $= 0.25$ for both steel and cast iron.

3. A circular hoop of 1 ft. mean diameter is made of $\frac{1}{4}$ inch diameter rod, and has a piece $\frac{1}{4}$ inch long cut from it, leaving a gap of that width between the ends of the rod. What force applied tangentially to these ends will just close the gap? $E = 30 \times 10^6$ lb./in.².

4. A shaft 8 inches in diameter is subjected at a section to a B.M. of 160,000 lbs.-ins., a T.M. of 240,000 lb.-ins., and an end thrust of 200,000 lbs. Find the maximum principal stress and the inclination of this principal stress to the axis of the shaft.

5. Deduce an expression for the deflection due to shear in a uniform rectangular beam, ends free, loaded uniformly.

In the case of large built-up sections, what method is adopted in practice for estimating the total deflection due to bending and shear?

Second Half

1. Discuss fully:—

(a) General influence of rate of loading on the effects produced in metals under tension.

(b) Effects of temperature on the mechanical properties of wrought iron and steel.

2. A weight of 3,000 lbs. is supported by three parallel wires in the same vertical plane, the middle one being steel and the outer ones brass,

and each having a sectional area of $\frac{1}{4}$ of a square inch. The wires are adjusted so that each carries equal parts of the load when the temperature is 60 degrees Fah. Find the stress in each wire (a) at 60 degrees F., (b) at 200 degrees F., and state what proportion of the whole load is carried by the steel wire. The values of E are 30×10^6 lbs. per sq. inch for steel, 12×10^6 lbs. per sq. inch for brass, the coefficients of expansion for Fahrenheit degrees being '0000062 for steel, and '0001 for brass.

3. A reinforced concrete floor is to carry a uniformly spread load, the span being 12 ft. and the floor 10 inches thick. Determine what reinforcement is necessary and what load per sq. ft. may be carried, the centres of the steel bars being placed $1\frac{1}{2}$ inches from the lower side of the floor, the permissible stress in the concrete being 600 lbs. per sq. inch and in the steel 12,000 lbs. per sq. inch, the modulus of direct elasticity for steel being 10 times that for concrete. If the load per sq. ft. of floor is 300 lbs., estimate the extreme stresses in the materials assuming bending in one direction only.

4. A carriage spring is to be 2 ft. long and made of $\frac{3}{8}$ inch steel plates 2 inches broad. How many plates are required to carry a central of 1,000 lbs. without exceeding the stress of 15 tons per sq. inch? What would then be the deflection at the centre, and what would be the initial radius of curvature if the plates all straighten under this load? $E = 30 \times 10^6$ lbs. per sq. inch.

5. Helical springs 4 inches diameter and having 10 complete coils are made of steel. (1) $\frac{1}{2}$ inch dia. round; (2) elliptical section $\frac{1}{2}$ inch by $\frac{3}{8}$ inch, the smaller diameter being radial to the axis of the coil; (3) $\frac{1}{2}$ inch square; and (4) rectangular section $\frac{1}{2}$ inch wide and $\frac{1}{4}$ inch thick, the thickness being radial to the axis of the coil. The coils in each case make an angle of 30 degrees with a plane perpendicular to the axis of the coils. Find in each case the stretch due to an axial load of 12 lbs.

($N = 12 \times 10^6$ and $E = 30 \times 10^6$ lbs. per square inch.)

HEAT ENGINES

Examiners— { PROF. J. RIFFKIN, B.Sc. (GLASS.) DIP. R.T.C.,
A.M.I.MECH.E., F.R.ECON.S.
MR. K. CHATTERON, B.Sc. .

The questions are of equal value.

Attempt THREE questions only from EACH half.

Steam tables and H ϕ charts may be used.

First Half

1. Air at $15^\circ\text{C}.$, and 15 lb./in.² abs. is expanded adiabatically till the pressure is 2 lb./in.² abs. The air then receives heat at constant pressure until its temperature is again $15^\circ\text{C}.$, and is afterwards compressed adiabatically to 15 lb./in.² abs. and exhausted at that pressure. Calculate the heat rejected in the exhaust per unit of work done.

Take $K_p = 0.238$, and $\gamma = 1.4$.

2. In a power station, steam at the rate of 500 lb./min. is supplied by a combined boiler and superheater at 400 lb./in.² abs. superheated $120^\circ\text{C}.$ After doing work in the high pressure section of a turbine the steam is

exhausted at 40 lb./in.² abs. with 20°C. superheat. This exhaust steam is reheated at constant pressure until its temperature is 260°C. and then supplied to the low-pressure section which it leaves at 1 lb./in.² abs. 0.95 dry. Calculate the power developed in each section and the efficiency of the whole plant. Reckon the heat supplied to the high-pressure section as from the feed temperature 94°C.

3. Describe, with the aid of a neat diagrammatic sketch, the essential parts of a CO₂ refrigerating machine.

State the merits and demerits of CO₂ as a refrigerating agent, and compare it with NH₃.

Give a sketch of the shew H ϕ diagram for NH₃, and trace the cycle of operations under tropical conditions with undercooling and dry compression. How would you determine the coefficient of performance?

4. Explain carefully what is meant by the 'reheat factor' in steam turbine design, and indicate how this factor involves two efficiency ratios.

A Curtis turbine having two pressure stages is supplied with steam at 180 lb./in.² abs. superheated 50°C. The steam is expanded in the first stage to 18 lb./in.² abs. and further in the second stage to 1 lb./in.² abs. Allowing for stage efficiencies of 0.70 and 0.65 respectively, determine the reheat factor.

5. What means are adopted in practice to measure the output from air compressors?

Show that the work done in compressing air from 1 to 7 atmospheres in a single-stage compressor is 12 per cent. greater than that required in a two-staged intercooled one when $n=1.3$.

Second Half

1. An impulse turbine of the Curtis type has two stages with one set of nozzles and three rotating and two stationary sets of blades. Superheated steam is expanded adiabatically in the first set of nozzles from a pressure of 180 lbs./in.² absolute and temperature 473°F. to 24 lbs./in.² absolute. The nozzles are inclined at an angle of 20° to the plane of rotation of the running blades, which have a peripheral speed of 450 ft. per sec. Determine the angles of the three moving and two stationary sets of blades, and give the absolute velocity of the steam as it leaves the last set of running blades.

2. Show how to determine the clearance volume of the cylinder of an internal combustion engine from an indicator diagram.

3. Determine the cylinder diameter of a horizontal compound steam engine with trip gear to develop 600 I.H.P. under the following conditions: Pressure in steam chest 155 lbs./in.² absolute, vacuum 26 ins., number of expansions 12, diagram factor 0.82, piston speed 650 ft. per min., cut off in high pressure cylinder $\frac{1}{4}$ stroke.

Determine also the point of cut off in the low pressure cylinder, and compare the work done in the two cylinders, when the initial loads are approximately equal.

4. In an engine working on the Otto cycle the following temperatures were measured: Temperature of suction 210°F., at end of compression 590°F., maximum temperature of explosion 2093°F., at end of expansion 1594°F. Estimate the ratio of compression and the ideal efficiency. Assume the law of compression to be $p v^{1.446} = \text{constant}$.

5. An engine is fitted with steam jackets so that the steam remains dry and saturated during expansion. If the initial temperature is 400°F. and the final pressure temperature is 126°F., calculate the heat supplied by the jacket per lb. of steam and the efficiency of the engine.

WORKS MANAGEMENT AND ACCOUNTS

Examiners— { PROF. J. RIFFKIN, B.Sc. (GLASS.), DIP. R.T.C.
A.M.I., MECH.F., F.R.ECON.S.
MR. F. W. SMALL

The questions are of equal value.

Attempt THREE questions only from EACH half.

First Half

1. During an investigation in a works it is found that an average worker performs a certain operation in 10 hours, his day rate being As. 6 per hour.

If by assiduous labour the worker can perform the operation in 8 hours, explain how you would apply the Weir, Rowan, and straight piece-work systems. Determine for all three systems—

- (a) the new wage rate per hour,
- (b) the premium,
- (c) the labour cost of the job.

2. What is the importance of determining accurately the expense due to idle time, both of workers and of machines? Discuss fully.

3. In a works the replacement of a machine is under consideration. Its original cost was Rs. 15,000, its life at the time of consideration is 6 years, but it is estimated to have 4 further years of service available. At the end of its life its residual value is estimated to be Rs. 2,000.

Assuming that depreciation is provided for by annually setting aside a constant percentage of the depreciated machine value, determine—

- (a) this percentage,
- (b) the value of the machine at the time of consideration.

4. How would you obtain the 'overhead expenses' or 'oncost' of an iron foundry, and how would you allocate this to the different castings so that each carried the expenses which its manufacture incurred?

If in your system, the material and labour costs, which appertain to the cupola, are combined to make a charge per unit weight of material delivered to the ladle, then give an explanation of such.

5. Prepare an organization chart for a large, modern engineering works. Write brief notes on the necessary qualifications of the departmental heads.

Second Half

The figures in the margin indicate full marks.

1. From the following particulars prepare J. Roy's Trading Account for the year 1934:—

Stocks January, 1934, Rs. 89,410-2-0 ; Sales Rs. 2,15,104-10-0 : Returns outwards Rs. 8,150-8-6 ; Purchases Rs. 1,60,812-8-0 ; Stock December, 1934, Rs. 64,800-11-0 ; Returns inwards Rs. 500-5-0. 33

2. Explain what you know to be Capital Expenditure, and state the considerations which would guide you at the time you allocate a charge to this account. 33

3. Your Works' Head Cashier has had instructions to pay out all bills and payments over Rs. 100 by cheque.

A contractor demands payment by cash Rs. 3,000 to prevent a strike. Your strong room has the money available. How would you make payment and still carry out the procedure of payment by cheque? Banks are closed and payment has to be made immediately. , 33

4. What are Raw Materials? 33

5. The firm you are employed with takes a physical stock once in six months. Illustrate a suitable form to take care of figures which will show the regular monthly stock figures available. 33

THEORY OF STRUCTURES

Examiners— { MR. PULIN BIHARI GHOSH, B.Sc., B.E., A.M.I.E.
., NABI BUX, B.Sc.

The questions are of equal value in each half.

First Half

Answer ANY FOUR question from this half.

1. A beam is firmly built-in at one end and the other end rests freely on the top of a cast iron column. The span of the beam is 20 feet and it carries a single load of 10 tons, 16 feet from the column end. Determine the reaction on the column, and draw the bending moment and shear force diagrams.

2. Two loads of 16 and 8 tons respectively at a distance of 15 feet apart cross a girder of 50 feet span, the smaller load leading from left to right. Draw to scale the diagram of maximum bending moment. State the greatest ordinate and its distance from the centre of the span; also the maximum bending moment midway between the supports.

3. What is meant by 'economical percentage of steel' in a reinforced concrete beam? What data are necessary for determining the economical percentage of steel. Assuming a set of reasonable data obtain the economical percentage of steel in a reinforced concrete beam.

A reinforced concrete beam is reinforced with 0.75% of reinforcement. Find out the ratio between the stresses of steel and concrete

$$\frac{E_s}{E_c} = 15.$$

4. A short circular column, external diameter 10 inches, thickness of metal 1 inch, carries a load of 50 tons, the line of action of which coincides with the axis of the column. It also carries a second load of 15 tons whose line of action is 6 inches from the centre of the column. Find the maximum and minimum stresses in the column, and show by a diagram how the stresses vary across the section.

5. A reservoir wall of rectangular cross-section, 20 feet high, has on one side water and on the other side earth, both level with the top of the wall. Work out the minimum thickness of the wall, so that the resultant pressure shall not deviate more than $\frac{1}{4}$ th of the thickness of the wall from the central axis of the horizontal base (i) when the reservoir is full, (ii) when all the water has been drained off.

Angle of repose of earth = 30° .

Weight of earth = 112 lbs./c.ft.

Weight of water = 62.5 lbs./c. ft.

Weight of masonry = 125 lbs./c.ft.

Second Half

Only THREE questions to be attempted, of which No. 2 is compulsory.

1. A plated stanchion is 22 ft. high and has its ends rigidly fixed. It is composed of a pair of 10-in \times 6-in. \times 42-lb. rolled steel joists at 7-in. centres of webs and a pair of 14-in. \times 1-in. plates, one on each flange. The mean thickness of the flanges is 0.786 in. and of the web 0.40 in. Find the crippling load of this stanchion—

(a) by Euler's formula;

(b) by Rankine's formula.

$E = 13,000$ tons per sq. in.

2. A symmetrically built roof truss is loaded at the joints as shown in Fig. 1.

Find—

(a) end reactions;

(b) stresses in the members AE , BC , FD , and ED graphically.

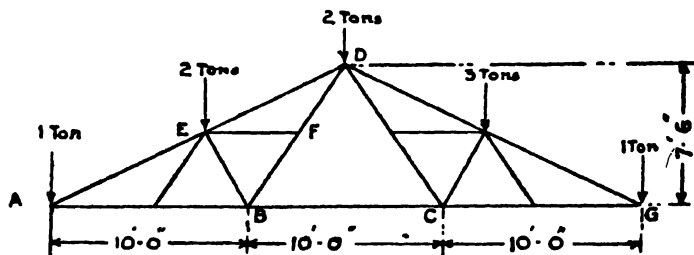


fig. 1.

3. (a) Prove Clapeyron's Theorem of Three Moments for a simple continuous beam carrying a uniformly distributed load.

(b) A horizontal beam $ABCD$ of uniform cross-section throughout rests on four supports covering three spans, AB 20 ft., BC 40 ft., CD 70 ft., and carries a uniformly distributed load of 6 tons, 4 tons, and 2 tons per foot-run on AB , BC , and CD respectively. Find reaction at each support and bending moments at supports B and C .

4. A girder of I section rests on two supports 16 ft. apart and carries a load of 6 tons, 5 ft. from one support. Find the deflection under the load and at the middle of the span.

$I = 375$ (inches)⁴.

$E = 13,000$ tons per sq. inch.

METALLURGY

(THEORETICAL)

The questions are of equal value.

Only THREE questions are to be attempted from EACH half.

First Half

1. Give an account of the materials that are introduced in an iron blast furnace, referring specially to those ingredients that may be harmful or otherwise. Discuss the chief iron ore deposits of India.

2. Describe the physical and chemical changes that occur during the conversion of blister copper into partially refined anodes and the electrolytic refining of the latter. In what respects is electrolytic copper different from tough-pitch copper?

3. Write what you know about the composition, properties, and uses of the following alloys: (a) Hard solder; (b) Aluminium bronze; (c) Babbit metal; (d) Hensler's alloy; (e) Permalloy; (f) High-speed steel.

4. What reasons are there to believe that metals are crystalline in structure? State how (a) ductility, (b) work-hardening, and (c) fatigue of metal, can be explained on the basis of its crystalline character.

Second Half

5. What are the deciding factors in the selecting of pig iron for an acid Bessemer blow? Give reasons for your answer.

6. State the defects which commonly occur in steel ingots, and explain how they can be remedied.

7. What are the essential requirements of a tool for rough cutting? State, with approximate compositions, two kinds of tool steel which are in common use, and briefly compare their properties.

8. Explain clearly how the heat treatment of iron and steel is influenced by the critical range. State the critical points for the following, together with the temperatures at which they occur—

- (a) 0.15% C steel;
- (b) Electrolytic Iron;
- (c) Rail steel.

THE END

